

7th Grade 20 Day Homework Day 1

- 1) Willie has a drawing that has a RV and a tree on it and the drawing is $\frac{1}{12}$ the size of the actual RV and tree. The tallest point of the RV is 11 ft 3 inches and the tree is 25 feet tall. How many inches tall is the tree in the drawing? Round to the nearest whole number if necessary.
- 2) In a box of 20 assorted cookies, four cookies contain walnuts, and five cookies contain coconut. What is the probability that a cookie chosen at random from the box contains neither coconut nor walnuts? Express your answer as a decimal.
- 3) A circular table has a circumference of 18.84 feet. What is the approximate area to the nearest square yard?
- 4) Sara and Carol agreed to split the cost of a CD which they would share. The CD had a list price of \$19, they had a 20% off coupon, and then they paid 8.25% sales tax. How much did each person pay?
- 5) In 2008, the cost of a DVD player was \$179. In 2015, the cost is $\frac{2}{7}$ of the price in 2008. What is the cost in 2015?
- 6) A toy manufacturer examines the satisfaction surveys from a sample of 120 parents and finds that 78 of them have given the toy a rating of 3.5 or better out of 4. The toy manufacturer claims that 80% of its toys have a satisfaction rating of 3.5 or better. Does the evidence support the toy manufacturer's claim?
- 7) George writes $\frac{1}{3}$ of a page every $\frac{1}{6}$ of an hour. How many pages can he write in one hour?
- 8) Using the equation $d = 33t$, identify the constant rate of change and then complete the following table:

Time	1 Hour	2 Hours	3 Hours	4 Hours
Distance				

- 9) A company that sells shoes spends \$500 per week leasing office space. The shoes cost \$11.50 each to produce and are sold for \$39.99 each. Write an inequality which could be used to show how many pairs of shoes the company would have to produce and sell each month in order to make a profit of at least \$1200 each month.
- 10) Classify the following numbers as rational numbers, whole numbers, or integers. There may be more than one answer.

$-2 \frac{4}{5}$ _____

-3 _____

$\frac{1}{3}$ _____

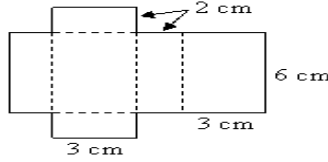
0 _____

1 _____

1.0303 _____

7th Grade 20 Day Homework Day 2

- 1) Ms. Holmes has 4 Frisbees which each have a diameter of 6 inches. Ms. Stoker has two more Frisbees than Ms. Holmes has and with the same diameter. What is the combined circumferences of Ms. Stoker's Frisbees?



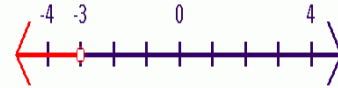
- 2) Find the total surface area of the net.

- 3) A bag has index cards with the following numbers on them: -4, 11, 13, -25, -12, and -18. If an index card is drawn randomly, what is the probability that a whole number will not be drawn? Finish the following expression which describes this: $1 - \underline{\hspace{2cm}}$

- 4) A rectangle with dimensions of 3 units by 5 units is enlarged by a scale factor of 1.4. By what percent does its area increase?

- 5) Humphrey's grandfather gave him 15 toy soldiers. Each month he buys 25 more. How many months will it take him to collect a total of 340 toy soldiers? Write an equation to express this scenario.

- 6) Solve the equation and then graph the solution. $-4x - 7 > 5$

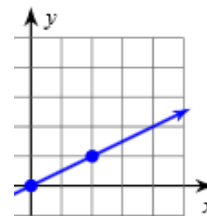


- 7) Ryan orders decals for his skateboard from an online store which charges \$5 per decal. When he checks out, he chooses expedited shipping which adds another \$10 to his total. Create a table which shows how much Ryan would pay for the first three decals.

Decals	Total Cost
1	
2	
3	

- 8) Using the information from the above problem, write the linear relationship as an equation.

- 9) Ms. Alamilla and two friends agreed to split the cost of going to a movie. They spent a total of \$26.25 for the tickets, \$36.75 for snacks, and 8% sales tax. How much did each person pay?



- 10) Looking at the graph, what is the constant of proportionality?

7th Grade 20 Day Homework Day 3

1) Mr. Husted has a wooden parallelogram which has a height of 4 centimeters and a base of 11 centimeters. Ms. Henningsen also has a parallelogram which has a height of 7 centimeters and a base of .15 meters. What is the combined area of their parallelograms in kilometers?

2) Write an equation for the model below and then find the solution.



3) Create a list showing the sample space for the following scenario: You can choose between a roast beef, ham, or tuna sandwich and then between grape or orange juice.

4) Ms. Agbor has a four sector spinner with the numbers 1-4 and a bag of 10 marbles. Two marbles are red, three are green, two are blue, and three are red. What is the probability that Ms. Agbor landed on the number 4, then drew a red marble out of the bag and put it on the table, and then drew another red marble out of the bag?

5) Does the solution $x = 21$ work for the following equation? $x/6 - 15 = -8$

6) Label each description as either simple interest or compound interest.

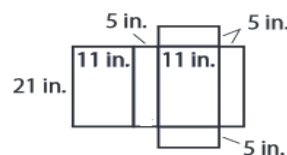
You earn "interest on your interest".

Your interest payments stay constant.

7) Two triangles are similar. The smaller one has a base of 8 cm and a height of 10.8 cm. The larger one has a base of 12.3 cm. What is the larger triangles height?

8) A nine-pack of juice boxes is priced at \$2.87 and a 27 pack of juice boxes is priced at \$8.79. Using the above information, complete the following sentence: The unit rate for the nine-pack of juice boxes is _____ cent _____ than the unit rate for the 27 pack of juice boxes.

9) Junction Roller Rink charges \$15 for skate rentals plus \$10 an hour for skating and 7% sales tax. Stephanie skated 3 hours and when she went to pay, she pulled out \$43 and realized that she didn't have enough money. How much additional money did she need?



10) Find the total surface area of the figure.

7th Grade 20 Day Homework Day 4

- Write an equation which expresses circumference if the radius is 4 centimeters.
- A number cube has six faces numbered 1-6. Mr. Reed had one of his students come to the front of the classroom and roll the numbered cube 50 times as the class recorded the results in a frequency table.

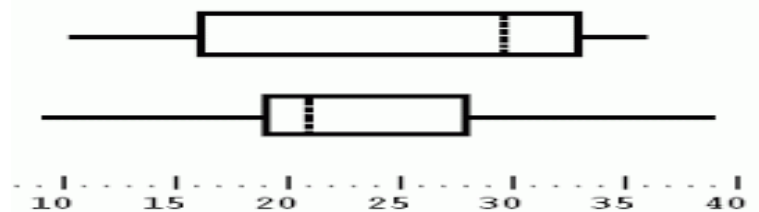
Number Rolled	1	2	3	4	5	6
Frequency	6	8	9	8	9	10

What was the percentage difference between the experimental probability and the theoretical probability results in terms of rolling an odd number?

- The scale factor of two similar polygons is 3:4. The perimeter of the larger polygon is 200 cm. What is the perimeter of the smaller polygon?
- Amor has \$50 to spend. She wants to buy a CD for \$20 and spend the rest on jewelry sets which cost \$8 each. Write an inequality and then solve for the number of jewelry sets that she can buy.

x	x	11
52		

- Write and solve the equation which represents this model:
- Due to the bad weather, the price of a pound of oranges is expected to increase by 124%. If a pound of oranges now costs \$3.80, what will be the new cost?
- Mr. Alonzo has a recipe that needs 1 teaspoon of sugar for every 2 cups of flour. If he increases the amount of flour to 3 cups of flour, how many teaspoons of sugar are needed?
- What is the difference between the simple and compound interest if you invested a principal of \$500 for 2 years at a rate of 3%?
- One circle has a radius of 10 in and another has a radius of 15. Find the difference in area.



- What is the difference in the medians?

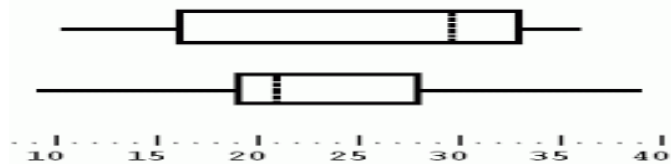
7th Grade 20 Day Homework Day 5

- Most road and racing bicycles today use 622 mm diameter rims. Write an expression which would solve for the circumference of the rim.
- How many centimeters are in 7 feet, given that 1 inch is approximately 2.54 cm?
- Twenty-five teachers were surveyed and asked if they were planning on taking a vacation and if that vacation was out of state for Spring Break. The table below summarizes their responses.

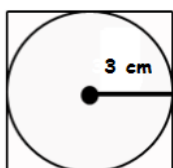
	Taking a Vacation	Not Taking a Vacation
Going Out of State	15	5
Not Going Out of State	3	2

Out of the teachers who are going to take a vacation, what percent are not going out of state?

- Ms. Ernest rented a car in Manhattan Kansas so that she could drive to Salina Kansas for a job interview. Enterprise charged her \$43.50 for renting the car as well as a \$5 fee for the navigation system. Write an equation for the cost in dollars (c), for the number of days (d), the car was rented.
- Mr. Anderson tosses a coin 15 times and it landed on tails 9 times. What is the probability of landing on tails on his 16th toss?
- A box has 11 green straws, 5 red straws, 10 purple straws, and 6 blue straws. If a straw is drawn at random, what is the probability that a green straw will not be drawn? Finish the following expression: $1 - \underline{\hspace{2cm}}$ which equals an answer of $\underline{\hspace{2cm}}$
- A blueprint has a scale of $\frac{1}{8}$ in = 1 foot. The drawing shows the width of a window to be $\frac{3}{4}$ inches wide. What is the actual width of the window?
- A rectangular toolbox has a length of $1 \frac{2}{3}$ ft, a width of 6 inches, and a height of $7 \frac{1}{8}$ inches. What is the volume of the toolbox rounded to the nearest tenth of an inch?

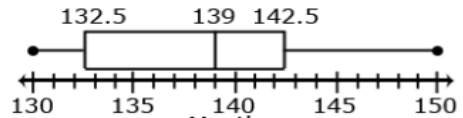


- Which distribution has a smaller spread?
- If Candace throws a dart at the board, what is the probability that her dart is not in the circle?

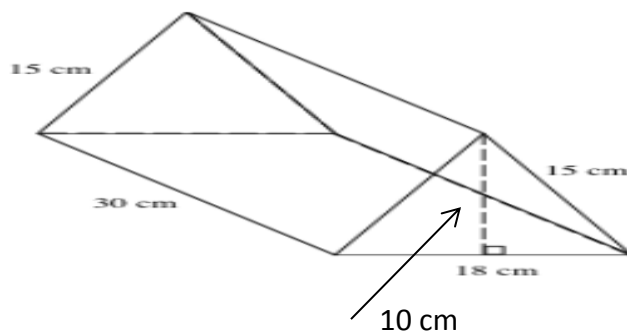


7th Grade 20 Day Homework Day 6

- 1) Jacob and his team placed third in this year's Ultimate Frisbee tournament. The official Frisbee used in the tournament had a diameter of 10 inches. What was the approximate circumference of the Frisbee?
- 2) A spinner has 3 black sections, 2 green sections, 2 white sections, and 1 brown section. What is the probability of spinning black on the first spin and white on the second spin?
- 3) The price of oranges can be determined by the equation $P = \$0.89n$ where P is the price, and n is the number of pound of oranges. What is the constant of proportionality?



- 4) Using the following data display, answer the questions below.
 - What is the median?
 - What is the spread?
 - Can you determine the mean?
 - What percent of the data falls below 139?
- 5) A couple bought a house and decided that they would pay 32% of their monthly income of \$4,178.62 toward their monthly mortgage. How much was their mortgage?
- 6) Esmeralda has a bulletin board which measures 4 feet by 4 feet. She also has 72 index cards which measure 4 inches by 6 inches. How many more index cards does she need in order to completely cover the bulletin board?
- 7) Meah has $\frac{2}{3}$ of an hour left to do her math homework before she has volleyball practice. It takes her about $\frac{1}{6}$ of an hour to work one math problem. About how many math problems can she work?
- 8) Salina Car Rental charges \$42 per day and \$0.12 per mile driven. How much will it cost to rent the car for 5 days and drive 270 miles, with an 8% sales tax rate?
- 9) A house is 70 feet wide. A photo shows the width as 2.5 inches and the height as 4 in. What is the actual height in feet?

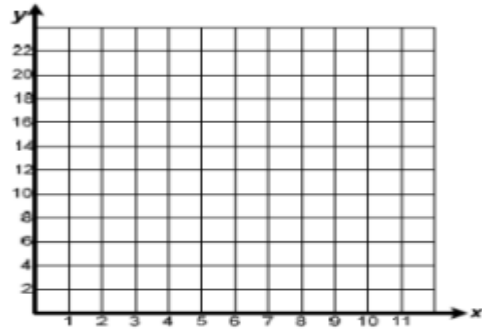


- 10) What is the volume of the figure?

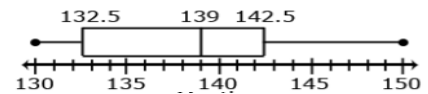
7th Grade 20 Day Homework Day 7

- Write an expression which solves for the radius of an object having a circumference of 46 feet.
- Use the following information to complete the table and the graph. Ramon charges \$5 per dog to walk them and an additional flat fee of \$2.00 to feed and water them.

Number of Dogs (x)	Process	Amount Earned (y)
1		
2		
3		



- Mr. Andade has a supply bag with three mechanical pencils, four blue pens, and five black pens. If he selects a writing utensil without looking, what is the probability he will select a mechanical pencil?
- A wheel spins at a rate of 41 revolutions per minute. How many revolutions per hour does it spin?
- Johanna needed a new hallway rug and she measured the length of the hallway as 20 feet. The actual measurement was 19.5 feet. What is Johanna's percent error rounded to the nearest whole percent?
- Jesus has a rectangular beach blanket which measures $5\frac{1}{4}$ by $3\frac{1}{2}$ feet long. He has a second blanket which is similar and has a width of $31\frac{1}{2}$ feet. What is the length of the second blanket?
- Which of the following measures would show the variation in data: mean, median, mode, range
- The triangular base of a prism is a right triangle with sides of 3 in, 4 in and 5 in. The height of the prism is $1\frac{1}{4}$ ft. What is the volume of the prism in cubic inches?
- A haircut cost \$16 which included tax. Joan tipped 20% and paid with a \$50 bill. What was her change?



- Using the following data display, answer the questions below.

- What percentage of the data points fall in the range of 130 to 132.5?
- What percentage of the data points fall in the range of 142.5 to 150?
- What is the IQR?
- What does that mean?

7th Grade 20 Day Homework Day 8

- 1) Find the area of the base of a lap top which measures 11 inches by 14 inches and has a height of 2 inches.
- 2) A jar has 5 red marbles and 10 blue ones. If you randomly pick a marble without replacing it and then select another, what is the fractional probability of getting two blue?
- 3) A small rectangle has a width of 3 cm. A large rectangle has an area of 210 sq cm and a width of 15 cm. If the two rectangles are similar, what is the area of the small rectangle?
- 4) Find the complement and supplement of an angle which has a measure of 150 degrees.
- 5) The large circle has a diameter of 80 feet and the smaller circle has a diameter of 4 feet. What is the difference in area of the two regions?

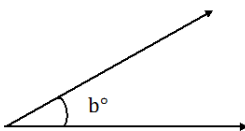


- 6) The volleyball team won $83 \frac{1}{3}\%$ of their games last season. If they played 18 games, what how many did they lose?
- 7) Mr. Apostol wants to create shelves for his classroom that are $1 \frac{1}{3}$ feet long. How many shelves can he put in his classroom if he uses an 18 foot long board to cut them from?
- 8) Mr. Alvarado bought a CD for 40% off the regular price of \$21, not including tax. The next day it was on sale for 70% off its regular price. How much money would he have saved if he had waited to buy the CD?
- 9) According to the Guinness World Record, Tillman the English bulldog is the fastest dog on a skateboard. If he travels at an average rate of 100 meters in 19.678 seconds, what is his unit rate?

5.

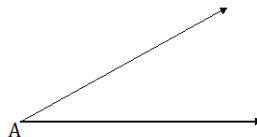
- 10) Name each of these angles according to the direction given.

Figure 1



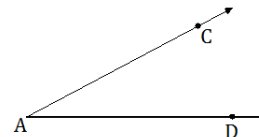
By the angle:

Figure 2



By the vertex:

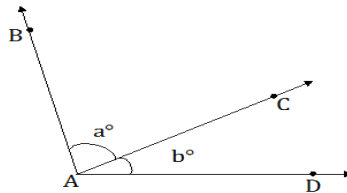
Figure 3



By the 3 points:

7th Grade 20 Day Homework Day 9

- 1) One circle has a radius of $\frac{1}{2}$ foot and another has a diameter of 15 inches. Find the difference in circumference to the nearest inch.
- 2) The ratio of the measures of a pair of adjacent angles on a line is 4:5. Find the measure of the two angles.
- 3) Ms. Newell has a number cube with the following numbers on it: 4, -13, 8, 46, 8, -9. What is the probability that when she rolls it she lands on something other than a whole number? Finish the following expression: $1 - \underline{\hspace{2cm}}$ which equals an answer of $\underline{\hspace{2cm}}$
- 4) A large rectangular box holds 12 rectangular shaped smaller boxes. The smaller box measures 4.8 cm by 2.2 cm by 3.4 cm. What is the volume of the large rectangular box?
- 5) At the same time of day, a person who is five feet two inches tall casts a three foot four inches long shadow and a building casts a twelve foot long shadow. What is the building's height to the nearest foot?
- 6) Karen earns \$400 per week plus an additional 4% of her sales. Her salary has increased by \$40 and her commission is now 6%. How much will she earn if her weekly sales are \$2500?
- 7) The Martinez family is going on a road trip and they want to download movies to take with them. It takes them $1\frac{2}{5}$ hours to download 1 movie and they leave in $5\frac{1}{4}$ hour. How many full movies will they have downloaded before they leave?



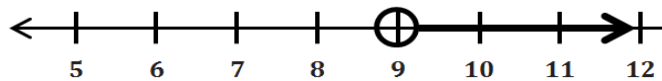
- 8) Name all adjacent angles in the figure.
- 9) Dan went to the arcade with \$33.60. He bought a slice of pizza and a drink for \$4.75 and then wanted to spend the rest of his money on game tickets which cost \$1.36 per pack. Write an inequality to represent the total spent where g is the number of tickets purchased.
- 10) Dan wants to use this inequality to determine whether he can purchase 25 packs. Use substitution to show whether he will have enough money.

7th Grade 20 Day Homework Day 10

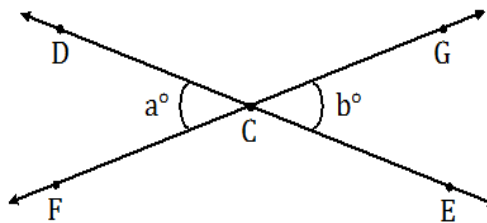
- 1) Create a list showing the sample space for the following scenario: You can choose between a chef salad, tuna salad, or chicken salad, and then between ranch or french dressing.
- 2) Mr. Ramirez gives school supplies out as prizes for games and activities. When a student wins a prize, they reach into a bag and draw out an index card which has the name of the prize they won. The table below shows the results of 50 prizes that were won over a period of 2 months. What is the percent probability that winners won anything but a ruler?

Outcome	Eraser	Pen	Pencil	Ruler	Book Cover
Draws	7	11	6	12	14

- 3) A three-pack of socks is priced at \$1.99 and 7-packs of socks are priced at \$1.85. Using the above information, complete the following sentence: The unit rate for a three-pack of socks is _____ cents _____ than the unit rate for the 7-pack of socks.
- 4) A triangular prism with a base length of 9.1 cm and a base height of 10 cm has a prism height of 12.3 cm. Find B.
- 5) Does the solution $x = -1$ work for the following equation? $x/-1 - 1 = -1$
- 6) On Ernest Airlines, baggage cannot weigh more than 40 pounds. Devin packed 21 pounds of clothes and four packages which weighed a total of 7 pounds. Write an inequality for this scenario. Then solve and determine the weight that each package must be less than.



- 7) Write the inequality for this diagram:
- 8) Find both the complement and the supplement of an angle which measures 100 degrees.
- 9) A model car is $10\frac{1}{2}$ long, versus an actual car which measures $15\frac{3}{4}$ feet long. What is the value of the ratio of the length of the model car to the length of the real car? What does the ratio mean?

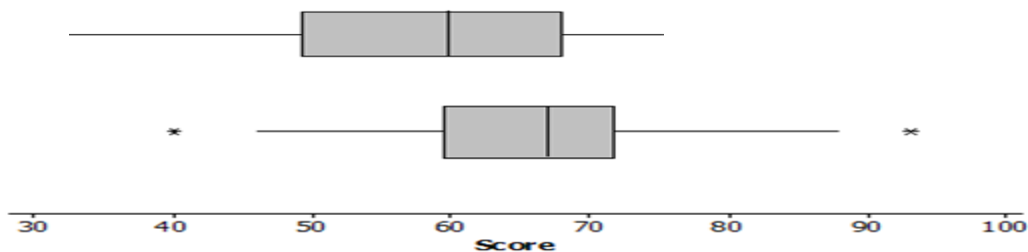


- 10) Name all vertical angles in the picture.

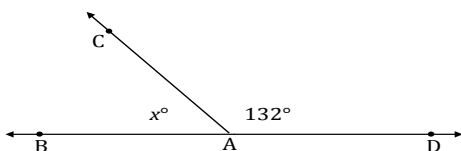
7th Grade 20 Day Homework Day 11

- 1) A cube has sides with the following numbers: 3, 3, 6, 9, 7, 8. What is the probability of getting a rational number when rolled? Express this both as a decimal and as a fraction.
- 2) Which of the following represents the area of a circle with a diameter of 22 cm? $11 \pi \text{ cm}^2$, $22 \pi \text{ cm}^2$, or $121 \pi \text{ cm}^2$
- 3) Graph the following: $x < 17.98$
- 4) Aubrey earned \$8.66 per car that she washed and \$100 in tips. She earned at least \$170 by the end of the day. Write an inequality and find the minimum number of cars, to the nearest car, that she washed.
- 5) A rectangular aquarium fish tank is 10.2 meters long, 5.8 meters wide, and 3.5 meters deep. What is the volume of the fish tank if the top $\frac{1}{3}$ is just air?
- 6) Find the ratio of the area of two circles with radii 4 cm and 5 cm.
- 7) Anyone within 100 meters would have at most 28 minutes before they encounter their first zombie. How many zombies would they encounter in 6 minute shy of an hour and a half?
- 8) The circumference of a circle is _____ to its _____.
- 9) The top boxplot shows the amount of fundraising dollars that the boys raised and the bottom boxplot shows the amount of fundraising dollars the girls raised.. Finish the following statement:

Three fourths of the _____ did better on fundraising than _____ of the boys. You can tell by comparing _____ for the girls to the _____ of the boys.



- 10) Write an equation for the angle relationship shown in the figure and solve for x .



7th Grade 20 Day Homework Day 12

- 1) A rectangular aquarium fish tank is 10 meters long, 5 meters wide, and 3 meters deep. What is B?
- 2) What is the difference between the simple and compound interest if you invested a principal of \$300 for 1 year at a rate of 6%?
- 3) Students in a research class went to the mall and found that the mean age was 25 years old. Based on this observation, which of the following is most likely?
 - The mean ages of all of the people was 25 years old.
 - About a third of the people who went to the mall were older than 41.
 - The mean age of all people who went to the mall would probably be an interval around 25 years of age, i.e, between 23 and 27.
 - The median age was 25 years old as well.
- 4) We use more than 100 billion plastic bags each year and 300 bags per person per year. In five years time, how many bags would a family of 5 use?
- 5) Identify 7 components in a personal budget:

- 6) Katherine rolls a fair number cube 50 times and records the results in the frequency table below.

Number Rolled	1	2	3	4	5	6
Frequency	6	8	9	8	9	10

Complete the following statements after calculating the experimental and theoretical probabilities (leave your answers as decimals):

- The _____ probability of rolling an even number was _____ while the _____ probability was _____.
- 7) Find both the complement and the supplement of an angle which measures c degrees.



- 8) What inequality is represented by the diagram? 134 135 136 137 138 139
- 9) If one circle has a diameter of **10 cm** and a second circle has a diameter of **20 cm**, what is the ratio of the area of the larger circle to the area of the smaller circle?
- 10) Write the matching pair of angles whose measurements are in a ratio of 2 : 1.
90° and _____ 180° and _____

7th Grade 20 Day Homework Day 13

- 1) Write an expression which solves for the radius of an object having a circumference of 30 feet.
- 2) Ms. Lasater tosses 3 fair coins. What is the probability that all three coins will land tails up?
- 3) A flat screen TV is marked up 45% from its wholesale price of \$950. What is the retail price of the TV after a 10% coupon and 6% sales tax is applied?
- 4) Ms. Acosta has a map of Kansas that uses a scale of 1-inch equals 2.5 miles. The map indicates that Salina to Manhattan is 24 inches. How many miles is that?
- 5) If Sara sleeps 25% of the day, how many minutes is she awake?
- 6) $\angle DBE$ is four times the measure of $\angle FBG$. Label $\angle DBE$ as y° and $\angle FBG$ as x° .
Write an equation that describes the relationship between $\angle DBE$ and $\angle FBG$.
- 7) The cost of renting a car is \$35 per day plus a one-time fee of \$50.50 for insurance. How many days can the car be rented if the total cost is to be no more than \$425?
Write an inequality which describes this.
- 8) The average cost of a real Christmas tree is \$36 while the average cost of a fake tree is \$65. On average, what is the percent increase of a fake tree?
- 9) The amount of sales tax paid on an item is _____ to the _____ of the item.
- 10) Which is proportional and why? Simple interest or compound interest?

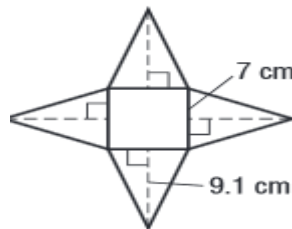
7th Grade 20 Day Homework Day 14

- 1) A circular table has a circumference of 18 feet. What is the approximate diameter?
- 2) A bookcase has 4 history books, 1 science book, 2 math books, and 3 comic books. What is the fractional probability of randomly selecting a math book and then without replacing it selecting another math book?

- 3) Which of the following expressions match the table?

x	2	3	5	6
y	-3	-8	-10	-9

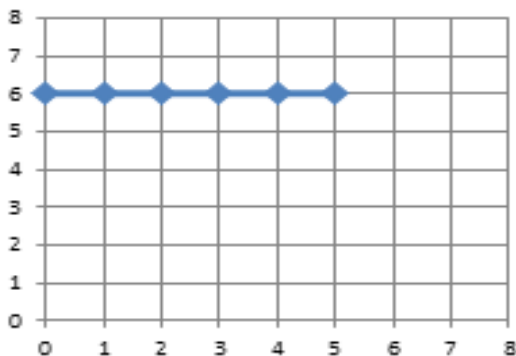
- $x < y$
 - $2x < -y$
 - $x < -y$
 - $2x > -y$
- 4) Alexis has \$52.62 to spend. The video store charges \$5.50 per video plus 8.125% tax. How many videos can she rent?
 - 5) Two parallelograms are similar. The smaller one has a base of 2.8 cm and a height of 3.5 cm. The larger one has a base of 4.2 cm. What is the larger parallelogram's height?
 - 6) Find both the complement and the supplement of an angle which measures $2x$ degrees.
 - 7) For Alonzo's birthday, his mother is making cupcakes for his **12** friends at his daycare. The recipe calls for $3\frac{1}{3}$ cups of flour. This recipe makes $2\frac{1}{2}$ dozen cupcakes. Alonzo's mother only has **1** cup of flour. How much more flour does she need in order for each person to get at least one cupcake?
 - 8) If it costs \$150,000 to start a 20-acre tree farm, what would it cost to start a 32-acre farm?
 - 9) The amount of gasoline used on a trip is roughly proportional to the length of the trip. For example, if a car gets 19 miles per gallon, then the number of gallons of gasoline used is roughly _____ times the number of miles traveled.



- 10) What is the lateral surface area of the net?

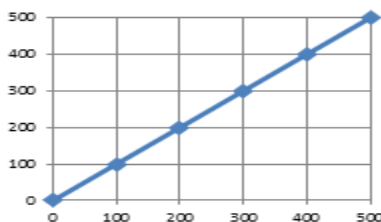
7th Grade 20 Day Homework Day 15

- 1) A spinner has 6 sectors with the colors pink, orange, pink, orange, green, and green. What is the probability the spinner lands on pink?
- 2) In 2010, the one billion market for trees dropped by 15%. What was the new market?
- 3) A piece of steel is shaped like a right triangular prism. The steel has a volume of 220 cubic inches and each base has an area of 10 square inches. Find the altitude.
- 4) On the average, a person can reach about 1.25 times their height.
 - What type of relationship is this?
 - What does 1.25 represent?
 - How many inches would a 5 foot tall person be able to reach?
- 5) At the same time of day, a person who is five feet two inches tall casts a three foot four inches long shadow and a building casts a twelve foot long shadow. What is the building's height to the nearest foot?
- 6) How do you know if the graph of a line is proportional?
- 7) When Ms. Ernest was leaving Texas to move to Kansas, her friend gave her a planter which had an area of $1\frac{1}{2}$ square feet. Of that, $\frac{3}{4}$ of the planter had sunflowers. How many square feet had bluebonnets?
- 8) A rectangular small closet measures 12 ft by 9 ft. How much will it cost to carpet the closet if it costs \$1.75 per square foot with an 8.25% sales tax?
- 9) A spinner has the following sectors: 3, 13, 17, 9, 12. It was spun 40 times and out of those 40 spins, it landed on a prime number, 17 times. However, the theoretical probability would have predicted that a prime number would have been landed on exactly _____ times.
- 10) Does this graph represent a proportional relationship? Why or why not?



7th Grade 20 Day Homework Day 16

- 1) A cube has sides with the following numbers: 3, 5, 9, 5, 7, 3. What is the probability of getting a composite number when rolled?
- 2) In 2006, approximately 9.3 million fake trees were sold. In 2010, approximately 8.2 million trees were sold. By what percent did sales drop? Round to the nearest hundredth.
- 3) The number of defective manufactured objects in a given batch is roughly proportional to the size of the batch. For example, if a batch of 10,000 widgets arrives and after examining 200 of them, you realize that there are 28 defective ones, you can estimate that there will be about _____ defective ones in every 100 widgets. This means that the total number of defective widgets is around _____ in 10,00 widgets. This also equates to a _____% defective rate.
- 4) A bag has 5 green chips, 4 red, 2 purple, and 5 blue. If a chip is drawn randomly, what is the probability that a blue or red will not be drawn?
- 5) What is the approximate distance around the bottom of a lampshade that has a radius of 6 inches?
- 6) Jason earned \$30 tutoring his cousin in math. He spent one-third of the money on a used CD and one-fourth of the money on lunch. What fraction of the money did he not spend?
- 7) Circle A has a diameter of 16 inches and Circle B has a diameter of 2 inches. How many times bigger is Circle A?
- 8) Mike has a drawing that has a house and a tree on it and the drawing is $\frac{1}{15}$ the size of the actual house and tree. The tallest point of the house is 10 ft 3 inches and the tree is 30 feet tall. How many inches tall is the tree in the drawing?
- 9) Mr. Adams told his students that either the rectangular prism or the rectangular pyramid had a volume of 520 ft^3 . He gave his students the dimensions of each and asked them to determine and prove which figure held that volume.
 - Rectangular prism: length = 5 ft; width = 2 feet, height of prism = 6 ft
 - Rectangular pyramid: base = 24 feet, height = 5 feet, pyramid height = 13 feet
- 10) Does this graph represent a proportional relationship? Why or why not?



7th Grade 20 Day Homework Day 17

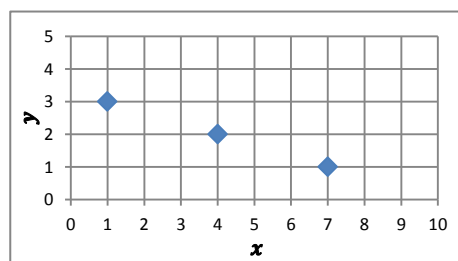
- 1) Karen earns \$400 per week plus an additional 4% of her sales. Her salary has increased by \$40 and her commission is now 6%. How much will she earn if her weekly sales are \$2500?
- 2) What is the probability of tossing two coins and getting heads on each coin?
- 3) Kathy's lunch cost \$16 which included tax. Kathy tipped 20% and reached for a \$20 bill. Did she have enough money?
- 4) Orchids are the most commonly sold type of potted flowering plants in the U.S. In 2010, sales reached \$171 million which was up 6% from the year before. What were the sales in 2009 rounded to the nearest million?
- 5) The U.S. Christmas tree market is approximately 13 million. If 619,000 of those trees are sold in Wisconsin, what percent of the Christmas tree market belongs to Wisconsin? Round to the nearest tenth.
- 6) Oskar found the mean and median of this list of numbers: 10, 30, 30. Explain what would happen to the median and the mean if the number 70 was added to the list.
- 7) Mr. Nagasinghe has $4 \frac{3}{5}$ pounds of flour in a container. He also has a box with 1.5 pounds of flour in it. If he pours one-fourth of the flour from the box into the container, how many ounces of flour will be left in the box?
- 8) Two rectangles are similar. The larger one has a length of 5.4 cm and a width of 3 cm. The smaller one has a width of 1.5 cm. What is the smaller rectangle's length?
- 9) Label each table as either proportional or not proportional.

x	y
3	15
4	17
5	19
6	21

x	y
6	4
9	6
12	8
3	2

- 10) The following table gives the number of people picking strawberries in a field and the corresponding number of hours that those people worked picking strawberries. Graph the ordered pairs from the table. Does the graph represent two quantities that are proportional to each other? Explain why or why not.

x	y
1	3
7	1
4	2



7th Grade 20 Day Homework Day 18

- 1) A blueprint shows that a house's length is 100 cm and the width is 80 cm. If the actual house length is 40 meters, what is the actual width?
- 2) A jar has 5 red marbles and 10 blue ones. If you randomly pick a marble without replacing it and then selects another, what is the fractional probability of getting two red?
- 3) Jaime has \$114.56 in her savings account and her bank just raised the interest paid on her savings account by $\frac{1}{2}\%$. If her old rate was .5%, what is her new rate as a decimal?
- 4) Javier saw a sales sign which indicated that he could choose any three t-shirts for \$14.50. The three that he selected had individual price tags of \$4.99, \$7.99, and \$6.99 which made him realize that he had saved some money through the sale. How much money did he save?
- 5) Rebecca gets a part time job in order to pay for her cheerleading uniform. Her employer tells her that she will be earning \$7.25 per hour and they promise her at least three four- hour work days per week. What is the minimum amount of money she will gross in eight weeks?
- 6) Last year a ticket to a movie cost \$10.00. This year, the price increased to \$12.00. By what percent did the price increase?
- 7) Hannah was looking at a scale drawing of the house she plans to build. The drawing had a scale of 1 inch = 5.4 feet. The width of her new dining room was 4 inches. How wide is her actual dining room going to be?
- 8) Ms. Smith needs 2 $\frac{1}{5}$ pounds of corn mesa in order to make tamales. When she went to the grocery store, she found a package of 1 $\frac{3}{8}$ pounds. What fraction of a pound does she still need?
- 9) The table below shows the price, in dollars, for the number of candy bouquets indicated.

Number of Candy Bouquets	3	6	9	12	15
Price (Dollars)	9	18	27	36	45

Are the prices proportional?

What is the constant of proportionality?

How much will 20 bouquets cost?

- 10) The model represents the equation $5x + 1 = 4y + 3$

$$\boxed{x} \boxed{x} \boxed{x} \boxed{x} \boxed{x} \bigcirc = \boxed{y} \boxed{y} \boxed{y} \boxed{y} \bigcirc \bigcirc \bigcirc$$

Which equation can you use to find the value of x?

A. $x = 4y + 3$

C. $x = 9y + 2$

B. $x = \underline{y + 2}$

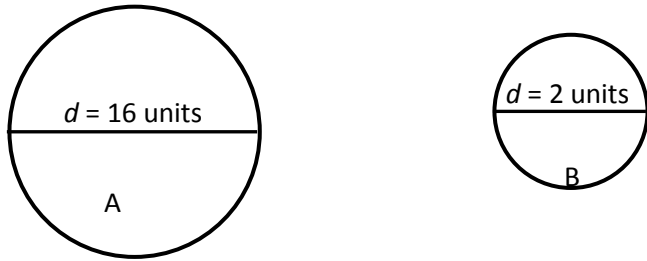
D. $x = \underline{4y + 2}$

4

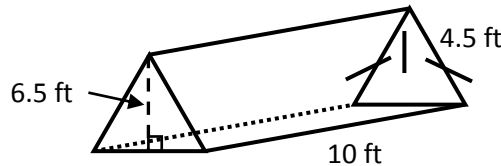
5

7th Grade 20 Day Homework Day 19

- 1) How many times greater is the circumference of circle A than the circumference of circle B?



- 2) A sporting goods store has the tent below on display. What does the area of the base measure?



- 3) Ms. Palacios drove 360 miles to Dallas in 5 hours. Which equation shows how long it will take her to drive 900 miles if she travels at the same rate?

F. $x = (900) \frac{360}{5}$

H. $x = (900) \frac{5}{360}$

G. $x = (360) \frac{5}{900}$

J. $x = (900) \frac{15}{360}$

- 4) Ms. Ballard bought two dozen marbles for \$2.25. How much did each marble cost?
- 5) Barton detergent sells bottles of dishwashing soap. The smallest bottle they sell is 7 ounces, if Mr. Barlow buys the smallest bottle and uses four and $\frac{3}{4}$ ounces, how much detergent will be left in the bottle?
- 6) Mr. Beauchamp has two acres of land and plans to use $\frac{3}{4}$ of it for a vegetable garden. If he plants tomatoes in half of the garden, how much of his land will be left to use for something else?
- 7) A cockroach can travel 3 miles per hour. How many miles will the cockroach travel in three and three-quarters days?
- 8) Mr. Benson is using $\frac{7}{8}$ yard of fringe to decorate his two lamps. If he cuts off a piece that is $\frac{1}{6}$ yards long, how much does he still have left?
- 9) Christine works on math homework for $2 \frac{3}{8}$ hours each week. If she worked for a total of 35 hours, approximately how many weeks did she work on homework (to the nearest week)?
- 10) The math team has 6 girls and 8 boys. The teacher will randomly choose two students to do a problem in front of the team in order to practice for the upcoming meet. What is the probability that she will choose a boy and then a boy?

7th Grade 20 Day Homework Day 20

Write the following sentences five times each.

- 1) I will be careful with my decimals.
- 2) I will always look up the formulas that I need instead of trying to “remember them”!
- 3) I need to be very careful with my multiplication and division.
- 4) Most of these problems require at least two steps. So if I did the problem in five seconds, I probably did it wrong.
- 5) This is not a math test. This is reading test in disguise.
- 6) Problems that have graphs, charts, and tables still require me to do math! So if I did not do any math on these problems, then I probably got the problem wrong.
- 7) Less than goes to the left when graphing inequalities and more than goes to the right.
- 8) A straight line is only proportional if it goes through the origin.

I've got this!!!

Answers 7th Grade 20 Day Homework Day 1

- Willie has a drawing that has a RV and a tree on it and the drawing is $\frac{1}{12}$ the size of the actual RV and tree. The tallest point of the RV is 11 ft 3 inches and the tree is 25 feet tall. How many inches tall is the tree in the drawing? Round to the nearest whole number if necessary. **25 inches**
- In a box of 20 assorted cookies, four cookies contain walnuts, and five cookies contain coconut. What is the probability that a cookie chosen at random from the box contains neither coconut nor walnuts? Express your answer as a decimal. **.55**
- A circular table has a circumference of 18.84 feet. What is the approximate area to the nearest square yard? **3 yards²**
- Sara and Carol agreed to split the cost of a CD which they would share. The CD had a list price of \$19, they had a 20% off coupon, and then they paid 8.25% sales tax. How much did each person pay? **One pays \$8.22 and one pays \$8.23**
- In 2008, the cost of a DVD player was \$179. In 2015, the cost is $\frac{2}{7}$ of the price in 2008. What is the cost in 2015? **\$51.14**
- A toy manufacturer examines the satisfaction surveys from a sample of 120 parents and finds that 78 of them have given the toy a rating of 3.5 or better out of 4. The toy manufacturer claims that 80% of its toys have a satisfaction rating of 3.5 or better. Does the evidence support the toy manufacturer's claim? **No, 80% would be 96 which is not close to 78.**
- George writes $\frac{1}{3}$ of a page every $\frac{1}{6}$ of an hour. How many pages can he write in one hour? **2 pages**
- Using the equation $d = 33t$, identify the constant rate of change and then complete the following table:
constant rate of change is 33

Time	1 Hour	2 Hours	3 Hours	4 Hours
Distance	33	66	99	132
- A company that sells shoes spends \$500 per week leasing office space. The shoes cost \$11.50 each to produce and are sold for \$39.99 each. Write an inequality which could be used to show how many pairs of shoes the company would have to produce and sell each month in order to make a profit of at least \$1200 each month. **$39.99x - 2000 - 11.50x \geq 1200$ or $28.49x - 2000 \geq 1200$**
- Classify the following numbers as rational numbers, whole numbers, or integers. There may be more than one answer.

-2 $\frac{4}{5}$ **rational**

-3 **integer, rational**

$\frac{1}{3}$ **rational**

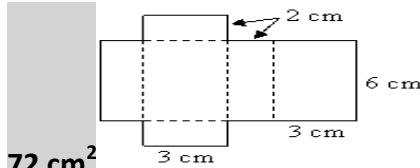
0 **whole, integer, rational**

1 **whole, integer, rational**

1.0303 **rational**

Answers 7th Grade 20 Day Homework Day 2

- 1) Ms. Holmes has 4 Frisbees which each have a diameter of 6 inches. Ms. Stoker has two more Frisbees than Ms. Holmes has and with the same diameter. What is the combined circumferences of Ms. Stoker's Frisbees? **113.04 inches**

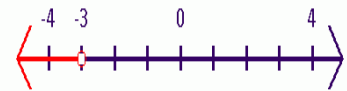


- 2) Find the total surface area of the net. **72 cm²**

- 3) A bag has index cards with the following numbers on them: -4, 11, 13, -25, -12, and -18. If an index card is drawn randomly, what is the probability that a whole number will not be drawn? Finish the following expression: $1 - \frac{2}{3}$
- 4) A rectangle with dimensions of 3 units by 5 units is enlarged by a scale factor of 1.4. By what percent does its area increase? **96%**
- 5) Humphrey's grandfather gave him 15 toy soldiers. Each month he buys 25 more. How many months will it take him to collect a total of 340 toy soldiers? Write an equation to express this scenario.

$$25x + 15 = 340$$

- 6) Solve the equation and then graph the solution. $-4x - 7 > 5$ **$x < -3$**



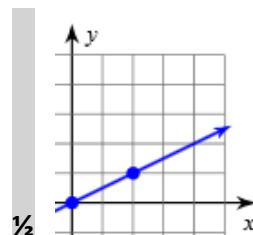
- 7) Ryan orders decals for his skateboard from an online store which charges \$5 per decal. When he checks out, he chooses expedited shipping which adds another \$10 to his total. Create a table which shows how much Ryan would pay for the first three decals.

Decals	Total Cost
1	$10 + 5(1) = 15$
2	$10 + 5(2) = 20$
3	$10 + 5(3) = 25$

- 8) Using the information from the above problem, write the linear relationship as an equation.

$$y = 5x + 10$$

- 9) Ms. Alamilla and two friends agreed to split the cost of going to a movie. They spent a total of \$26.25 for the tickets, \$36.75 for snacks, and 8% sales tax. How much did each person pay? **\$22.68**

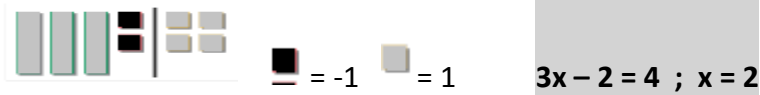


- 10) Looking at the graph, what is the constant of proportionality? **$\frac{1}{2}$**

Answers 7th Grade 20 Day Homework Day 3

1) Mr. Husted has a wooden parallelogram which has a height of 4 centimeters and a base of 11 centimeters. Ms. Henningsen also has a parallelogram which has a height of 7 centimeters and a base of .15 meters. What is the combined area of their parallelograms in kilometers? **.00149 Km**

2) Write an equation for the model below and then find the solution.



3) Create a list showing the sample space for the following scenario: You can choose between a roast beef, ham, or tuna sandwich and then between grape or orange juice. **roast beef, and grape, roast beef, and orange, ham and grape, ham and orange, tuna and grape, tuna and orange**

4) Ms. Agbor has a four sector spinner with the numbers 1-4 and a bag of 10 marbles. Two marbles are red, three are green, two are blue, and three are red. What is the probability that Ms. Agbor landed on the number 4, then drew a red marble out of the bag and put it on the table, and then drew another red marble out of the bag? **1/18**

5) Does the solution $x = 21$ work for the following equation? $x/6 - 15 = -8$ **NO**

6) Label each description as either simple interest or compound interest.

You earn "interest on your interest". **Compound interest**

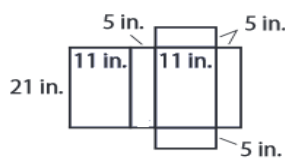
Your interest payments stay constant. **Simple interest**

7) Two triangles are similar. The smaller one has a base of 8 cm and a height of 10.8 cm. The larger one has a base of 12.3 cm. What is the larger triangles height? **16.605 cm**

8) A nine-pack of juice boxes is priced at \$2.87 and a 27 pack of juice boxes is priced at \$8.79. Using the above information, complete the following sentence: The unit rate for the nine-pack of juice boxes is **1** cent **less** than the unit rate for the 27 pack of juice boxes.

9) Junction Roller Rink charges \$15 for skate rentals plus \$10 an hour for skating and 7% sales tax. Stephanie skated 3 hours and when she went to pay, she pulled out \$43 and realized that she didn't have enough money. How much additional money did she need? **\$5.15**

10) Find the total surface area of the figure. **782 cm²**



Answers 7th Grade 20 Day Homework Day 4

- 1) Write an equation which expresses circumference if the radius is 4 centimeters.

$C = 2\pi(4)$ or $C = 8\pi$ or $C = \pi(2)4$

- 2) A number cube has six faces numbered 1-6. Mr. Reed had one of his students come to the front of the classroom and roll the numbered cube 50 times as the class recorded the results in a frequency table.

Number Rolled	1	2	3	4	5	6
Frequency	6	8	9	8	9	10

What was the percentage difference between the experimental probability and the theoretical probability results in terms of rolling an odd number? **2%**

- 3) The scale factor of two similar polygons is 3:4. The perimeter of the larger polygon is 200 cm. What is the perimeter of the smaller polygon? **150 cm**

- 4) Amor has \$50 to spend. She wants to buy a CD for \$20 and spend the rest on jewelry sets which cost \$8 each. Write an inequality and then solve for the number of jewelry sets that she can buy.

$8x + 20 \leq 50$; she can buy 3 sets

x	x	11
52		

- 5) Write and solve the equation which represents this model:

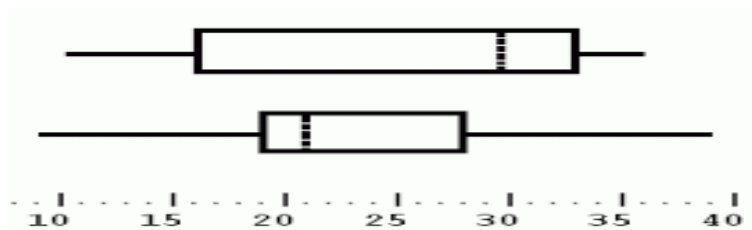
$2x + 11 = 52$; $x = 20.5$

- 6) Due to the bad weather, the price of a pound of oranges is expected to increase by 124%. If a pound of oranges now costs \$3.80, what will be the new cost? **\$8.51 a pound**

- 7) Mr. Alonzo has a recipe that needs 1 teaspoon of sugar for every 2 cups of flour. If he increases the amount of flour to 3 cups of flour, how many teaspoons of sugar are needed? **1.5**

- 8) What is the difference between the simple and compound interest if you invested a principal of \$500 for 2 years at a rate of 3%? **\$0.45**

- 9) One circle has a radius of 10 in and another has a radius of 15. Find the difference in area. **392.5 inches²**



- 10) What is the difference in the medians? **9**

Answers 7th Grade 20 Day Homework Day 5

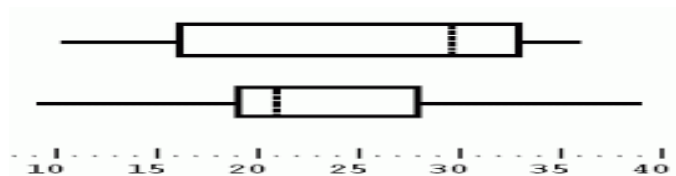
- Most road and racing bicycles today use 622 mm diameter rims. Write an expression which would solve for the circumference of the rim. **$C = 622\pi$**
- How many centimeters are in 7 feet, given that 1 inch is approximately 2.54 cm? **213.36 cm**
- Twenty-five teachers were surveyed and asked if they were planning on taking a vacation and if that vacation was out of state for Spring Break. The table below summarizes their responses.

	Taking a Vacation	Not Taking a Vacation
Going Out of State	15	5
Not Going Out of State	3	2

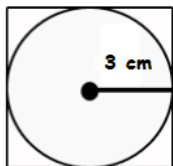
Out of the teachers who are going to take a vacation, what percent are not going out of state? **16.6%**

- Ms. Ernest rented a car in Manhattan Kansas so that she could drive to Salina Kansas for a job interview. Enterprise charged her \$43.50 for renting the car as well as a \$5 fee for the navigation system. Write an equation for the cost in dollars (c), for the number of days (d), the car was rented. **$C = 43.5d + 5$**
- Mr. Anderson tosses a coin 15 times and it landed on tails 9 times. What is the probability of landing on tails on his 16th toss? **$\frac{1}{2}$**
- A box has 11 green straws, 5 red straws, 10 purple straws, and 6 blue straws. If a straw is drawn at random, what is the probability that a green straw will not be drawn? Finish the following expression: $1 - \frac{11}{32}$ which equals an answer of **$\frac{21}{32}$**
- A blueprint has a scale of $\frac{1}{8}$ in = 1 foot. The drawing shows the width of a window to be $\frac{3}{4}$ inches wide. What is the actual width of the window? **6 feet**
- A rectangular toolbox has a length of $1 \frac{2}{3}$ ft, a width of 6 inches, and a height of $7 \frac{1}{8}$ inches. What is the volume of the toolbox rounded to the nearest tenth of an inch? **855 in³**

- Which distribution has a smaller spread? **top**



- If Candace throws a dart at the board, what is the probability that her dart is not in the circle? **21.5%**

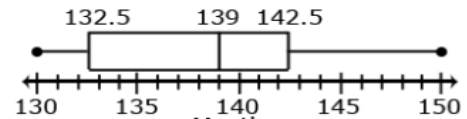


Answers 7th Grade 20 Day Homework Day 6

1) Jacob and his team placed third in this year's Ultimate Frisbee tournament. The official Frisbee used in the tournament had a diameter of 10 inches. What was the approximate circumference of the Frisbee?
 $C = 31$ inches

2) A spinner has 3 black sections, 2 green sections, 2 white sections, and 1 brown section. What is the probability of spinning black on the first spin and white on the second spin? **$3/32$**

3) The price of oranges can be determined by the equation $P = \$0.89n$ where P is the price, and n is the number of pound of oranges. What is the constant of proportionality? **.89**



4) Using the following data display, answer the questions below.

What is the median? **139**

What is the spread? **20**

Can you determine the mean? **No**

What percent of the data falls below 139? **50%**

5) A couple bought a house and decided that they would pay 32% of their monthly income of \$4,178.62 toward their monthly mortgage. How much was their mortgage? **\$1,337.16**

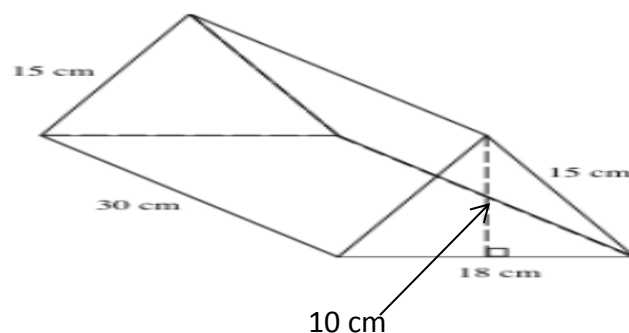
6) Esmeralda has a bulletin board which measures 4 feet by 4 feet. She also has 72 index cards which measure 4 inches by 6 inches. How many more index cards does she need in order to completely cover the bulletin board? **24**

7) Meah has $2/3$ of an hour left to do her math homework before she has volleyball practice. It takes her about $1/6$ of an hour to work one math problem. About how many math problems can she work? **4**

8) Salina Car Rental charges \$42 per day and \$0.12 per mile driven. How much will it cost to rent the car for 5 days and drive 270 miles, with an 8% sales tax rate? **\$261.79**

9) A house is 70 feet wide. A photo shows the width as 2.5 inches and the height as 4 in. What is the actual height in feet? **112 feet**

10) What is the volume of the figure? **900 cm^2**



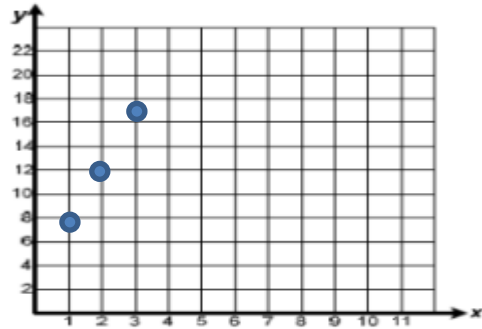
Answers 7th Grade 20 Day Homework Day 7

- 1) Write an expression which solves for the radius of an object having a circumference of 46 feet.

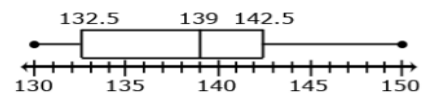
$r = 46/2\pi$ or $r = 23/\pi$

- 2) Use the following information to complete the table and the graph. Ramon charges \$5 per dog to walk them and an additional flat fee of \$2.00 to feed and water them.

Number of Dogs (x)	Process	Amount Earned (y)
1	$1(5) + 2$	7
2	$2(5) + 2$	12
3	$3(5) + 2$	17



- 3) Mr. Andade has a supply bag with three mechanical pencils, four blue pens, and five black pens. If he selects a writing utensil without looking, what is the probability he will select a mechanical pencil? $\frac{1}{4}$
- 4) A wheel spins at a rate of 41 revolutions per minute. How many revolutions per hour does it spin? **2,460 revolutions**
- 5) Johanna needed a new hallway rug and she measured the length of the hallway as 20 feet. The actual measurement was 19.5 feet. What is Johanna's percent error rounded to the nearest whole percent? **3%**
- 6) Jesus has a rectangular beach blanket which measures $5\frac{1}{4}$ by $3\frac{1}{2}$ feet long. He has a second blanket which is similar and has a width of $31\frac{1}{2}$ feet. What is the length of the second blanket? **47.25 feet**
- 7) Which of the following measures would show the variation in data: mean, median, mode, **range**
- 8) The triangular base of a prism is a right triangle with sides of 3 in, 4 in and 5 in. The height of the prism is $1\frac{1}{4}$ ft. What is the volume of the prism in cubic inches? **90 in³**
- 9) A haircut cost \$16 which included tax. Joan tipped 20% and paid with a \$50 bill. What was her change? **\$30.80**



- 10) Using the following data display, answer the questions below.

What percentage of the data points fall in the range of 130 to 132.5? **25%**

What percentage of the data points fall in the range of 142.5 to 150? **25%**

What is the IQR? **10**

What does that mean? **It means that the values of the middle 50% of the data vary by 10.**

Answers 7th Grade 20 Day Homework Day 8

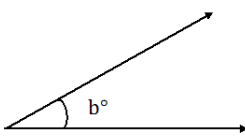
- 1) Find the area of the base of a lap top which measures 11 inches by 14 inches and has a height of 2 inches. **154 in²**
- 2) A jar has 5 red marbles and 10 blue ones. If you randomly pick a marble without replacing it and then select another, what is the fractional probability of getting two blue? **3/7**
- 3) A small rectangle has a width of 3 cm. A large rectangle has an area of 210 sq cm and a width of 15 cm. If the two rectangles are similar, what is the area of the small rectangle? **8.4 square cm**
- 4) Find the complement and supplement of an angle which has a measure of 150 degrees.
Complement= none; Supplement = 30 degrees
- 5) The large circle has a diameter of 80 feet and the smaller circle has a diameter of 4 feet. What is the difference in area of the two regions? **5011.44 ft²**



- 6) The volleyball team won 83 1/3% of their games last season. If they played 18 games, what how many did they lose? **3 games**
- 7) Mr. Apostol wants to create shelves for his classroom that are 1 1/3 feet long. How many shelves can he put in his classroom if he uses an 18 foot long board to cut them from? **13 1/2**
- 8) Mr. Alvarado bought a CD for 40% off the regular price of \$21, not including tax. The next day it was on sale for 70% off its regular price. How much money would he have saved if he had waited to buy the CD? **\$6.30**
- 9) According to the Guinness World Record, Tillman the English bulldog is the fastest dog on a skateboard. If he travels at an average rate of 100 meters in 19.678 seconds, what is his unit rate?
5.08 meters per second

- 10) Name each of these angles according to the direction given.

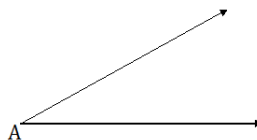
Figure 1



By the angle:

∠b°

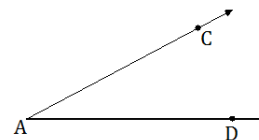
Figure 2



By the vertex:

∠A

Figure 3

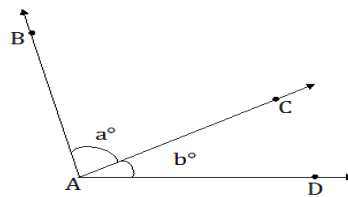


By the 3 points:

∠CAD or ∠DAC

Answers 7th Grade 20 Day Homework Day 9

- 1) One circle has a radius of $\frac{1}{2}$ foot and another has a diameter of 15 inches. Find the difference in circumference to the nearest inch. **9 inches**
- 2) The ratio of the measures of a pair of adjacent angles on a line is 4:5. Find the measure of the two angles. **One angle is 80° and the other is 100°**
- 3) Ms. Newell has a number cube with the following numbers on it: 4, -13, 8, 46, 8, -9. What is the probability that when she rolls it she lands on something other than a whole number? Finish the following expression: $1 - \frac{2}{3}$ which equals an answer of **$\frac{1}{3}$**
- 4) A large rectangular box holds 12 rectangular shaped smaller boxes. The smaller box measures 4.8 cm by 2.2 cm by 3.4 cm. What is the volume of the large rectangular box? **430.848 cm^3**
- 5) At the same time of day, a person who is five feet two inches tall casts a three foot four inches long shadow and a building casts a twelve foot long shadow. What is the building's height to the nearest foot? **19 feet**
- 6) Karen earns \$400 per week plus an additional 4% of her sales. Her salary has increased by \$40 and her commission is now 6%. How much will she earn if her weekly sales are \$2500? **\$590**
- 7) The Martinez family is going on a road trip and they want to download movies to take with them. It takes them $1 \frac{2}{5}$ hours to download 1 movie and they leave in $5 \frac{1}{4}$ hour. How many full movies will they have downloaded before they leave? **3**



- 8) Name all adjacent angles in the figure.

Angles a and b are adjacent angles; $\angle BAC$ and $\angle CAD$ are adjacent angles.

- 9) Dan went to the arcade with \$33.60. He bought a slice of pizza and a drink for \$4.75 and then wanted to spend the rest of his money on game tickets which cost \$1.36 per pack. Write an inequality to represent the total spent where g is the number of tickets purchased.

$$\mathbf{1.36g + 4.75 \leq 33.60}$$

- 10) Dan wants to use this inequality to determine whether he can purchase 25 packs. Use substitution to show whether he will have enough money. **No, he does not have enough money.**

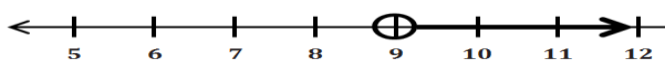
Answers 7th Grade 20 Day Homework Day 10

- 1) Create a list showing the sample space for the following scenario: You can choose between a chef salad, tuna salad, or chicken salad, and then between ranch or french dressing. **Chef with ranch, chef with french, tuna with ranch, tuna with french, chicken with ranch, chicken with french**
- 2) Mr. Ramirez gives school supplies out as prizes for games and activities. When a student wins a prize, they reach into a bag and draw out an index card which has the name of the prize they won. The table below shows the results of 50 prizes that were won over a period of 2 months. What is the percent probability that winners won anything but a ruler? **76%**

Outcome	Eraser	Pen	Pencil	Ruler	Book Cover
Draws	7	11	6	12	14

- 3) A three-pack of socks is priced at \$1.99 and 7-packs of socks are priced at \$1.85. Using the above information, complete the following sentence: The unit rate for a three-pack of socks is **40 cents more** than the unit rate for the 7-pack of socks.
- 4) A triangular prism with a base length of 9.1 cm and a base height of 10 cm has a prism height of 12.3 cm. Find B. **45.5 cm²**
- 5) Does the solution $x = -1$ work for the following equation? $x/-1 - 1 = -1$ **NO**
- 6) On Ernest Airlines, baggage cannot weigh more than 40 pounds. Devin packed 21 pounds of clothes and four packages which weighed a total of 7 pounds. Write an inequality for this scenario. Then solve and determine the weight that each package must be less than. **$4x + 21 \leq 40$ $x \leq 4.75$**

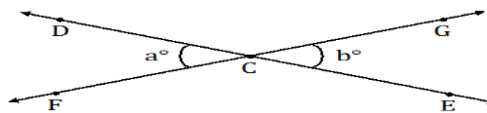
- 7) Write the inequality for this diagram: **$x > 9$**



- 8) Find both the complement and the supplement of an angle which measures 100 degrees.
Complement= none; Supplement = 80 degrees

- 9) A model car is $10\frac{1}{2}$ long, versus an actual car which measures $15\frac{3}{4}$ feet long. What is the value of the ratio of the length of the model car to the length of the real car? What does the ratio mean?
 $\frac{2}{3}$; every 2 inches in length of the model car corresponds to 3 feet in the actual car.

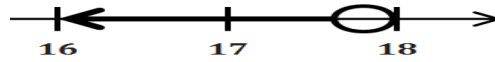
- 10) Name all vertical angles in the picture.



$a = b$ and $m\angle DCF = m\angle GCE$

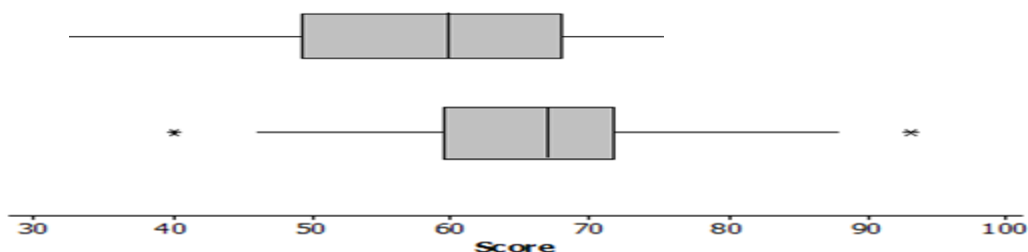
Answers 7th Grade 20 Day Homework Day 11

- 1) A cube has sides with the following numbers: 3, 3, 6, 9, 7, 8. What is the probability of getting a rational number when rolled? Express this both as a decimal and as a fraction. **1.0 and 6/6**
- 2) Which of the following represents the area of a circle with a diameter of 22 cm? $11 \pi \text{ cm}^2$, $22 \pi \text{ cm}^2$, or **$121 \pi \text{ cm}^2$**



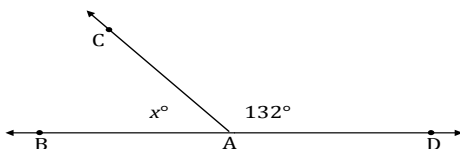
- 3) Graph the following: $x < 17.98$
- 4) Aubrey earned \$8.66 per car that she washed and \$100 in tips. She earned at least \$170 by the end of the day. Write an inequality and find the minimum number of cars, to the nearest car, that she washed. **$8.66c + 100 \geq 170$ she washed 8 full cars**
- 5) A rectangular aquarium fish tank is 10.2 meters long, 5.8 meters wide, and 3.5 meters deep. What is the volume of the fish tank if the top 1/3 is just air? **138.04 m^3**
- 6) Find the ratio of the area of two circles with radii 4 cm and 5 cm. **16/25**
- 7) Anyone within 100 meters would have at most 28 minutes before they encounter their first zombie. How many zombies would they encounter in 6 minute shy of an hour and a half? **3**
- 8) The circumference of a circle is proportional to its diameter.
- 9) The top boxplot shows the amount of fundraising dollars that the boys raised and the bottom boxplot shows the amount of fundraising dollars the girls raised.. Finish the following statement:

Three fourths of the girls did better on fundraising than half of the boys. You can tell by comparing Q1 for the girls to the median of the boys.



- 10) Write an equation for the angle relationship shown in the figure and solve for x .

$$x + 132 = 180 \quad x = 48^\circ$$



Answers 7th Grade 20 Day Homework Day 12

- 1) A rectangular aquarium fish tank is 10 meters long, 5 meters wide, and 3 meters deep. What is B?
50 m²
- 2) What is the difference between the simple and compound interest if you invested a principal of \$300 for 1 year at a rate of 6%? **\$0**
- 3) Students in a research class went to the mall and found that the mean age was 25 years old. Based on this observation, which of the following is most likely?
- The mean ages of all of the people was 25 years old.
 - About a third of the people who went to the mall were older than 41.
 - **The mean age of all people who went to the mall would probably be an interval around 25 years of age, i.e, between 23 and 27.**
 - The median age was 25 years old as well.
- 4) We use more than 100 billion plastic bags each year and 300 bags per person per year. In five years time, how many bags would a family of 5 use? **7,500 bags**

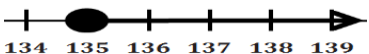
- 5) Identify 7 components in a personal budget:

- **Income**
- **Planned savings**
- **Retirement**
- **Emergencies**
- **Taxes**
- **Fixed expenses**
- **Variable expenses**

- 6) Katherine rolls a fair number cube 50 times and records the results in the frequency table below.

Number Rolled	1	2	3	4	5	6
Frequency	6	8	9	8	9	10

Complete the following statements after calculating the experimental and theoretical probabilities (leave your answers as decimals):

- The **theoretical** probability of rolling an even number was **.5** while the **experimental** probability was **.52**.
- 7) Find both the complement and the supplement of an angle which measures c degrees.
Complement = $90 - c$; Supplement = $180 - c$
- 8) What inequality is represented by the diagram? **$x \geq 135$**
- 
- 9) If one circle has a diameter of **10 cm** and a second circle has a diameter of **20 cm**, what is the ratio of the area of the larger circle to the area of the smaller circle? **4 to 1**
- 10) Write the matching pair of angles whose measurements are in a ratio of 2 : 1.
90° and 45° **180° and 90°**

Answers 7th Grade 20 Day Homework Day 13

- 1) Write an expression which solves for the radius of an object having a circumference of 30 feet.
 $r = 30/2\pi$ or $r = 15/\pi$
- 2) Ms. Lasater tosses 3 fair coins. What is the probability that all three coins will land tails up?
 $1/8$
- 3) A flat screen TV is marked up 45% from its wholesale price of \$950. What is the retail price of the TV after a 10% coupon and 6% sales tax is applied? **\$1,314.14**
- 4) Ms. Acosta has a map of Kansas that uses a scale of 1-inch equals 2.5 miles. The map indicates that Salina to Manhattan is 24 inches. How many miles is that? **60**
- 5) If Sara sleeps 25% of the day, how many minutes is she awake? **1080 minutes**
- 6) $\angle DBE$ is four times the measure of $\angle FBG$. Label $\angle DBE$ as y° and $\angle FBG$ as x° .
Write an equation that describes the relationship between $\angle DBE$ and $\angle FBG$. **$y = 4x$**
- 7) The cost of renting a car is \$35 per day plus a one-time fee of \$50.50 for insurance. How many days can the car be rented if the total cost is to be no more than \$425?
Write an inequality which describes this.
 $35x + 50.50 \leq 425$
- 8) The average cost of a real Christmas tree is \$36 while the average cost of a fake tree is \$65. On average, what is the percent increase of a fake tree? **80.6%**
- 9) The amount of sales tax paid on an item is proportional to the cost of the item.
- 10) Which is proportional and why? Simple interest or compound interest?

Simple interest—the interest earned is proportional to the time the money is on deposit.
Compound interest is computed at prescribed intervals and added in to the principal, so that the resulting growth is no longer strictly proportional to the original amount.

Answers 7th Grade 20 Day Homework Day 14

- 1) A circular table has a circumference of 18 feet. What is the approximate diameter? **6 feet**
- 2) A bookcase has 4 history books, 1 science book, 2 math books, and 3 comic books. What is the fractional probability of randomly selecting a math book and then without replacing it selecting another math book? **1/45**

3) Which of the following expressions match the table?

x	2	3	5	6
y	-3	-8	-10	-9

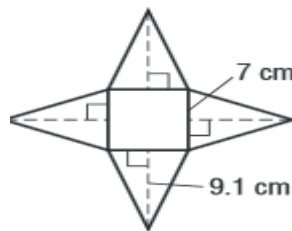
- $x < y$
 - $2x < -y$
 - $x < -y$
 - $2x > -y$
- 4) Alexis has \$52.62 to spend. The video store charges \$5.50 per video plus 8.125% tax. How many videos can she rent? **8**
- 5) Two parallelograms are similar. The smaller one has a base of 2.8 cm and a height of 3.5 cm. The larger one has a base of 4.2 cm. What is the larger parallelogram's height? **5.25 cm**
- 6) Find both the complement and the supplement of an angle which measures $2x$ degrees.
Complement = $90 - 2x$; Supplement = $180 - 2x$

7) For Alonzo's birthday, his mother is making cupcakes for his **12** friends at his daycare. The recipe calls for $3\frac{1}{3}$ cups of flour. This recipe makes $2\frac{1}{2}$ dozen cupcakes. Alonzo's mother only has **1** cup of flour. How much more flour does she need in order for each person to get at least one cupcake? **1/3**

8) If it costs \$150,000 to start a 20-acre tree farm, what would it cost to start a 32-acre farm? **\$240,000**

9) The amount of gasoline used on a trip is roughly proportional to the length of the trip. For example, if a car gets 19 miles per gallon, then the number of gallons of gasoline used is roughly **1/19** times the number of miles traveled.

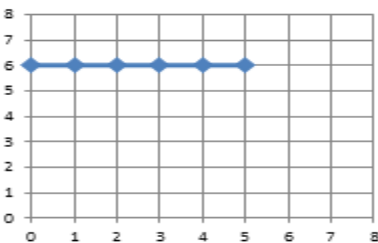
10) What is the lateral surface area of the net?



127.4 cm²

Answers 7th Grade 20 Day Homework Day 15

- 1) A spinner has 6 sectors with the colors pink, orange, pink, orange, green, and green. What is the probability the spinner lands on pink? **$\frac{1}{3}$**
- 2) In 2010, the one billion market for trees dropped by 15%. What was the new market? **150,000,000**
- 3) A piece of steel is shaped like a right triangular prism. The steel has a volume of 220 cubic inches and each base has an area of 10 square inches. Find the altitude. **22 inches**
- 4) On the average, a person can reach about 1.25 times their height.
 - What type of relationship is this? **Proportional**
 - What does 1.25 represent? **Constant of proportionality**
 - How many inches would a 5 foot tall person be able to reach? **75**
- 5) At the same time of day, a person who is five feet two inches tall casts a three foot four inches long shadow and a building casts a twelve foot long shadow. What is the building's height to the nearest foot? **19 feet**
- 6) How do you know if the graph of a line is proportional? **It is a straight line which goes through the origin**
- 7) When Ms. Ernest was leaving Texas to move to Kansas, her friend gave her a planter which had an area of $1\frac{1}{2}$ square feet. Of that, $\frac{3}{4}$ of the planter had sunflowers. How many square feet had bluebonnets? **$\frac{3}{8}$**
- 8) A rectangular small closet measures 12 ft by 9 ft. How much will it cost to carpet the closet if it costs \$1.75 per square foot with an 8.25% sales tax? **\$204.59**
- 9) A spinner has the following sectors: 3, 13, 17, 9, 12. It was spun 40 times and out of those 40 spins, it landed on a prime number, 17 times. However, the theoretical probability would have predicted that a prime number would have been landed on exactly _____ times. **24**
- 10) Does this graph represent a proportional relationship? Why or why not?



No. Even though the points appear on a line, the line does not go through the origin.

Answers 7th Grade 20 Day Homework Day 17

- 1) Karen earns \$400 per week plus an additional 4% of her sales. Her salary has increased by \$40 and her commission is now 6%. How much will she earn if her weekly sales are \$2500? **\$590**
- 2) What is the probability of tossing two coins and getting heads on each coin? **1/4**
- 3) Kathy's lunch cost \$16 which included tax. Kathy tipped 20% and reached for a \$20 bill. Did she have enough money? **yes**
- 4) Orchids are the most commonly sold type of potted flowering plants in the U.S. In 2010, sales reached \$171 million which was up 6% from the year before. What were the sales in 2009 rounded to the nearest million? **\$161 million**
- 5) The U.S. Christmas tree market is approximately 13 million. If 619,000 of those trees are sold in Wisconsin, what percent of the Christmas tree market belongs to Wisconsin? Round to the nearest tenth. **4.8%**
- 6) Oskar found the mean and median of this list of numbers: 10, 30, 30. Explain what would happen to the median and the mean if the number 70 was added to the list. **The median would stay the same, but the mean would increase.**
- 7) Mr. Nagasinghe has $4\frac{3}{5}$ pounds of flour in a container. He also has a box with 1.5 pounds of flour in it. If he pours one-fourth of the flour from the box into the container, how many ounces of flour will be left in the box? **18 ounces**
- 8) Two rectangles are similar. The larger one has a length of 5.4 cm and a width of 3 cm. The smaller one has a width of 1.5 cm. What is the smaller rectangles length? **2.7 cm**

- 9) Label each table as either proportional or not proportional.

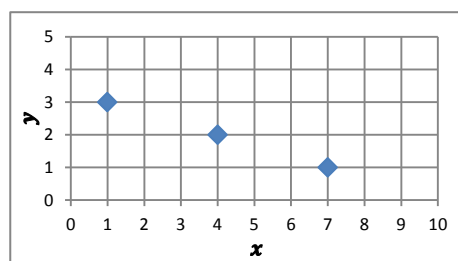
First one is not proportional, the second one is.

x	y
3	15
4	17
5	19
6	21

x	y
6	4
9	6
12	8
3	2

- 10) The following table gives the number of people picking strawberries in a field and the corresponding number of hours that those people worked picking strawberries. Graph the ordered pairs from the table. Does the graph represent two quantities that are proportional to each other? Explain why or why not. **No. Although the points fall on a line, the line does not pass through the origin, so the graph does not represent two quantities that are proportional to each other.**

x	y
1	3
7	1
4	2



Answers 7th Grade 20 Day Homework Day 18

- 1) A blueprint shows that a house's length is 100 cm and the width is 80 cm. If the actual house length is 40 meters, what is the actual width? **32 meters**
- 2) A jar has 5 red marbles and 10 blue ones. If you randomly pick a marble without replacing it and then selects another, what is the fractional probability of getting two red? **2/21**
- 3) Jaime has \$114.56 in her savings account and her bank just raised the interest paid on her savings account by $\frac{1}{2}\%$. If her old rate was .5%, what is her new rate as a decimal? **.01**
- 4) Javier saw a sales sign which indicated that he could choose any three t-shirts for \$14.50. The three that he selected had individual price tags of \$4.99, \$7.99, and \$6.99 which made him realize that he had saved some money through the sale. How much money did he save? **\$5.47**
- 5) Rebecca gets a part time job in order to pay for her cheerleading uniform. Her employer tells her that she will be earning \$7.25 per hour and they promise her at least three four- hour work days per week. What is the minimum amount of money she will gross in eight weeks? **\$696**
- 6) Last year a ticket to a movie cost \$10.00. This year, the price increased to \$12.00. By what percent did the price increase? **20%**
- 7) Hannah was looking at a scale drawing of the house she plans to build. The drawing had a scale of 1 inch = 5.4 feet. The width of her new dining room was 4 inches. How wide is her actual dining room going to be? **21.6 feet**
- 8) Ms. Smith needs $2\frac{1}{5}$ pounds of corn mesa in order to make tamales. When she went to the grocery store, she found a package of $1\frac{3}{8}$ pounds. What fraction of a pound does she still need? **33/40**
- 9) The table below shows the price, in dollars, for the number of candy bouquets indicated.

Number of Candy Bouquets	3	6	9	12	15
Price (Dollars)	9	18	27	36	45

Are the prices proportional? **Yes**

What is the constant of proportionality? **3**

How much will 20 bouquets cost? **\$60**

- 10) The model represents the equation $5x + 1 = 4y + 3$

$$\boxed{x} \boxed{x} \boxed{x} \boxed{x} \boxed{x} \bigcirc = \boxed{y} \boxed{y} \boxed{y} \boxed{y} \bigcirc \bigcirc \bigcirc$$

Which equation can you use to find the value of x?

A. $x = 4y + 3$

C. $x = 9y + 2$

B. $x = y + 2$

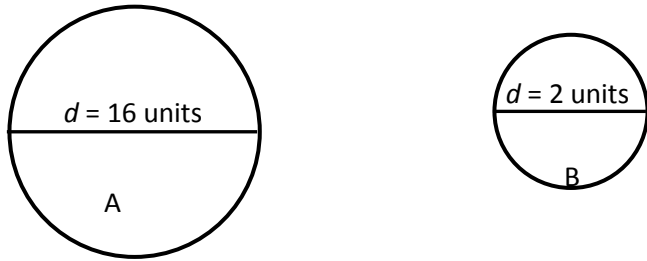
D. **$x = 4y + 2$**

4

5

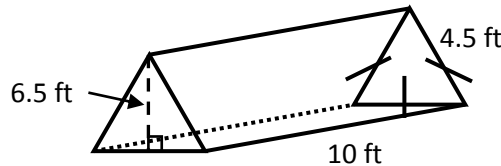
Answers 7th Grade 20 Day Homework Day 19

- 1) How many times greater is the circumference of circle A than the circumference of circle B? **8**



- 2) A sporting goods store has the tent below on display. What does the area of the base measure?

14.625 ft²



- 3) Ms. Palacios drove 360 miles to Dallas in 5 hours. Which equation shows how long it will take her to drive 900 miles if she travels at the same rate?

F. $x = (900) \frac{360}{5}$

H. $x = (900) \frac{5}{360}$

G. $x = (360) \frac{5}{900}$

J. $x = (900) \frac{15}{360}$

- 4) Ms. Ballard bought two dozen marbles for \$2.25. How much did each marble cost? **\$.09**
- 5) Barton detergent sells bottles of dishwashing soap. The smallest bottle they sell is 7 ounces, if Mr. Barlow buys the smallest bottle and uses four and $\frac{3}{4}$ ounces, how much detergent will be left in the bottle? **2 $\frac{1}{4}$ ounces**
- 6) Mr. Beauchamp has two acres of land and plans to use $\frac{3}{4}$ of it for a vegetable garden. If he plants tomatoes in half of the garden, how much of his land will be left to use for something else? **$1\frac{1}{4}$**
- 7) A cockroach can travel 3 miles per hour. How many miles will the cockroach travel in three and three-quarters days? **270 miles**
- 8) Mr. Benson is using $\frac{7}{8}$ yard of fringe to decorate his two lamps. If he cuts off a piece that is $\frac{1}{6}$ yards long, how much does he still have left? **$\frac{17}{24}$ yards**
- 9) Christine works on math homework for $2\frac{3}{8}$ hours each week. If she worked for a total of 35 hours, approximately how many weeks did she work on homework (to the nearest week)? **15 weeks**
- 10) The math team has 6 girls and 8 boys. The teacher will randomly choose two students to do a problem in front of the team in order to practice for the upcoming meet. What is the probability that she will choose a boy and then a boy? **$\frac{4}{13}$**