

# Making a Quantitative Prediction

You can use proportional reasoning to make quantitative predictions and compare options in real-world situations.



Math On the Spot

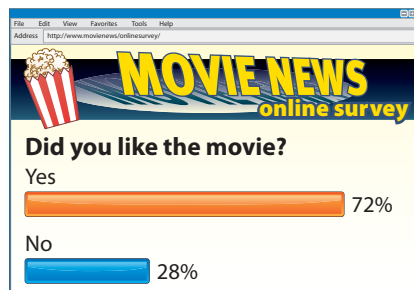
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## EXAMPLE 3

Problem Solving

TEKS 7.6.H

An online poll for a movie site shows its polling results for a new movie. If a newspaper surveys 150 people leaving the movie, how many people can it predict will like the movie based on the online poll? Is the movie site's claim accurate if the newspaper finds that 104 people say they like the movie?



### Analyze Information

The **answer** is a prediction of how many people out of 150 will like the movie based on the online poll. Also tell whether the 104 people that say they like the movie is enough to support the movie site's claim.

#### List the important information:

- The online poll says 72% of moviegoers like the new movie.
- A newspaper surveys 150 people.



### Formulate a Plan

Use a proportion to calculate 72% of the 150 people surveyed.



### Solve

$$\frac{72}{100} = \frac{x}{150}$$

Set up a proportion. 72 out of 100 is how many out of 150?

$$\frac{72}{100} = \frac{x}{150}$$

$$\frac{72}{100} \times 1.5 = \frac{x}{150} \times 1.5$$

$$\frac{72}{100} = \frac{108}{150}$$

$$\frac{72}{100} \times 1.5 = \frac{108}{150} \times 1.5$$

$$x = 108$$

Since 100 times 1.5 is 150, multiply 72 times 1.5 to find the value of  $x$ .

The newspaper can predict that 108 out of 150 people will say they like the movie, based on the online poll.



### Justify and Evaluate

Since 108 is close to 104, the newspaper survey and the online poll show that about the same percent of people like the movie.

My Notes