

## Explore

1. Much media attention has been focused on the use of mammography for detecting breast cancer. The following table shows, for 10,000 women in their forties, the number of women with positive vs. negative mammograms and the number who were diagnosed with cancer vs. those who were not diagnosed for 10 years.

	Positive Mammogram	Negative Mammogram	Total
Cancer	302	76	378
No Cancer	6,130	3,492	9,622
Total	6,432	3,568	10,000

- a. What percent of the 10,000 women had a positive mammogram?

$$\frac{6432}{10000} = 64\%$$

- b. What percent of the 10,000 women had a cancer diagnosis?

$$3.8\%$$

- c. What percent of the women who had cancer had a positive mammogram?

$$\frac{302}{378} = 80\%$$

- d. What percent of the women who had a positive mammogram had cancer?

$$4.7\%$$

- e. Explain why the answers to parts c and d are not the same. What do these two percents actually say about mammograms?