

Algebra 2 Bellwork Tuesday, April 26, 2016

1. A world-wide company has 58,000 employees. The company took a poll of 1600 employees and found that 1440 were happy with their current position.

- Find the sample proportion as a percent rounded to the nearest tenth.
- Find the margin of error to the nearest tenth of a percent.
- Find the range of values that most likely contains the population proportion for the percent of employees that are happy with their current position.
- Find the interval for the actual total number of employees that are happy with their current position.

2. A poll of registered voters has a margin of error of $\pm 2\%$. Find the sample size to the nearest whole number.

3. The probability that Johnny studies for his test tonight is $\frac{3}{8}$. The probability that Johnny watches listens to music is $\frac{8}{9}$. Find the following probability as a percent rounded to the nearest tenth.

$P(\text{study or listens to music}) =$

4. A survey was conducted to find out people's favorite color. Find each probability as a fraction.

	Red	Blue	Green	Orange	
Child	14	6	47	8	75
Adult	38	11	52	13	114
	52	17	99	21	189

a) $P(\text{Child or Orange}) =$

b) $P(\text{Green} \mid \text{Adult}) =$

1. A world-wide company has 58,000 employees. The company took a poll of 1600 employees and found that 1440 were happy with their current position.

a. Find the sample proportion as a percent rounded to the nearest tenth.

$$\frac{1440}{1600} \times 100 = 90\%$$

b. Find the margin of error to the nearest tenth of a percent.

$$\frac{1}{\sqrt{1600}} \times 100 = \pm 2.5\%$$

c. Find the range of values that most likely contains the population proportion for the percent of employees that are happy with their current position.

$$90 \pm 2.5 = 87.5\% \text{ to } 92.5\%$$

d. Find the interval for the actual total number of employees that are happy with their current position.

$$(.875)(58,000) = 50,750$$

$$(.925)(58,000) = 53,650$$

$$50,750 \text{ to } 53,650$$

2. A poll of registered voters has a margin of error of $\pm 2\%$. Find the sample size to the nearest whole number.

$$\frac{1}{\sqrt{n}} = .02$$

$$n = 2500$$

3. The probability that Johnny studies for his test tonight is $\frac{3}{8}$. The probability that Johnny watches listens to music is $\frac{8}{9}$. Find the following probability as a percent rounded to the nearest tenth.

$$P(\text{study or listens to music}) = \frac{3}{8} + \frac{8}{9} - \frac{3}{8} \cdot \frac{8}{9} \rightarrow 93.1\%$$

4. A survey was conducted to find out people's favorite color. Find each probability as a fraction.

	Red	Blue	Green	Orange	
Child	14	6	47	8	75
Adult	38	11	52	13	114
	52	17	99	21	189

a) $P(\text{Child or Orange}) =$

$$\frac{88}{189}$$

b) $P(\text{Green} | \text{Adult}) =$

$$\frac{52}{114}$$