

Solutions to Warmup 5

1. Suppose that the population of patients served by the Fenway Community Health Center is 70% male and 30% female. You want to do a survey of resource usage and draw a random sample of 20 patients. How many males and females do you expect to see in your sample?

You would probably expect 70% of your sample to be male and 30% to be female.

$$70\% \times 20 = 14 \text{ males}$$

14 males out of 20 means that the other 6 must be female (20-14=6).

$$\text{Check: } 30\% \text{ of } 20 = 6$$

2. You budget half your monthly stipend for rent, 1/4 for food, 1/6 for transportation, and have the rest (\$80) available for entertainment. What is your monthly stipend?

Let 1 = your entire budget.

So entertainment = $1 - \frac{1}{2}$ (rent) - $\frac{1}{4}$ (food) - $\frac{1}{6}$ (trans.) $\rightarrow \frac{1}{12}$ of your budget available for entertainment.

$$\$80 = \frac{1}{12} \text{ of what?}$$

$$\$80 \div \frac{1}{12} = \$80 \times 12 = \$960$$

So your monthly stipend is \$960.

Check:

$$\begin{aligned} \frac{1}{2} \text{ (rent)} &= 480 \text{ (ha! not likely...)} \\ \frac{1}{4} \text{ (food)} &= 240 \\ \frac{1}{6} \text{ (trans)} &= 160 \\ \text{(ent)} &= 80 \\ &= \$960 \end{aligned}$$