

1.) Find the unit rate.a) 84 frontz eaten  
over 6 hours

$$\frac{\text{frontz}}{\text{hr}} = \frac{84 \text{ frontz}}{6 \text{ hours}} = 14 \frac{\text{frontz}}{\text{hr}}$$

$$\frac{84}{6} = 6 \overline{)84} \quad \text{numerator} \div \text{denominator}$$

b.) Nate was arrested  
82 times over 6 days.

$$\frac{82 \text{ arrests}}{6 \text{ days}} = 13.7 \frac{\text{arrests}}{\text{day}}$$

2.)  $\frac{n}{10} = \frac{4}{8}$  cross multiply

$$8n = (10)(4)$$

$$\frac{8n}{8} = \frac{40}{8} \quad \boxed{n=5}$$

4.)  $\frac{r}{10} = \frac{8}{5}$   $\boxed{r=16}$

$$5r = (10)(8)$$

$$\frac{5r}{5} = \frac{80}{5} \quad \boxed{r=16}$$

3.)  $\frac{2}{6} = \frac{9}{x}$

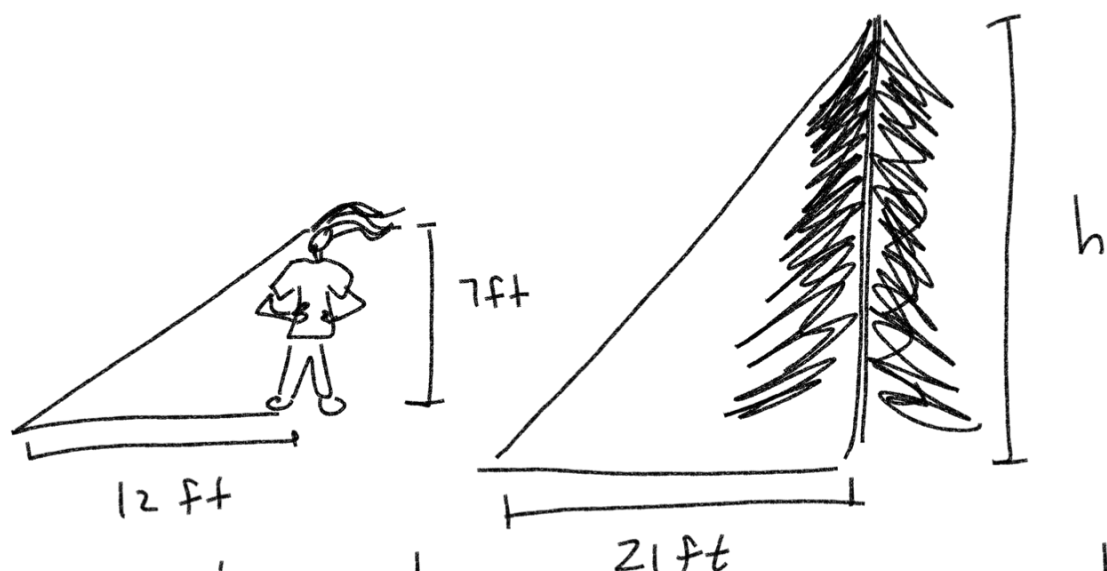
$$2x = (6)(9)$$

$$\frac{2x}{2} = \frac{54}{2} \quad \boxed{x=27}$$

5.)  $\frac{n}{8} = \frac{12}{30}$

$$(8)(12) = 30n$$

$$\frac{96}{30} = \frac{30n}{30} \quad \boxed{n=3.2}$$



Height  
shadow

$$\left| \begin{array}{c} \frac{7 \text{ ft}}{12 \text{ ft}} \\ \text{Nate} \end{array} \right|$$

$$= \frac{h}{21 \text{ ft}}$$

Tree

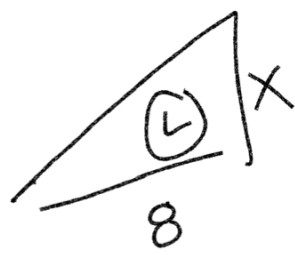
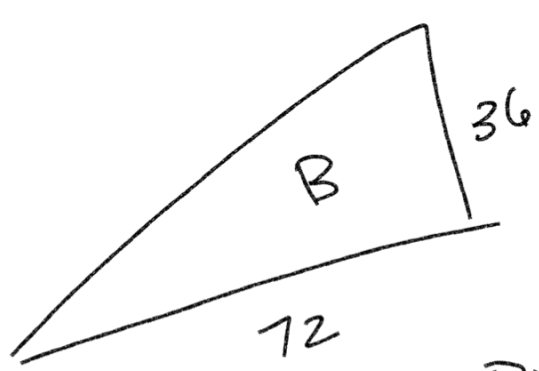
~~$$\frac{7}{12} = \frac{h}{21}$$~~

$$(7)(21) = 12h$$

$$h = 12.25 \text{ ft}$$

$$\frac{147}{12} = \frac{12h}{12}$$

### Similar Figures



Big'n

Lil'n

Height  
Base

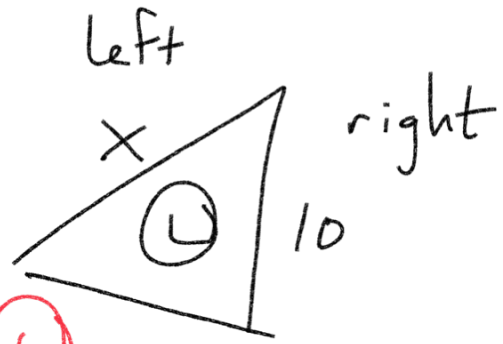
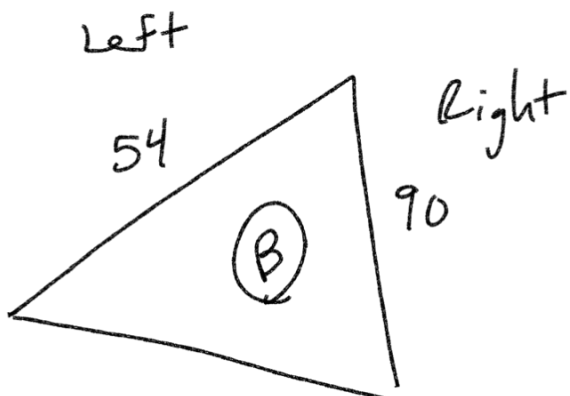
~~$$\frac{36}{72} = \frac{x}{8}$$~~

$$72x = (36)(8)$$

$$\frac{72x}{72} = \frac{288}{72}$$

$$x = 4$$

# Similar Triangles



Left  
Right

$$\frac{54}{90} = \frac{x}{10} = 6$$

(Note: Blue arrows indicate dividing 54 by 9 to get x, and dividing 90 by 9 to get 10.)

~~$$\frac{54}{90} = \frac{x}{10}$$~~

$$90x = (54)(10)$$

$$\frac{90x}{90} = \frac{540}{90}$$

$$x = 6$$

## Probability

# of desired outcomes

total # of outcomes

Reese's 24

Sour Patch Kids 12

Twix 16

Kit kat 8

Total 60



$$P(\text{Reese's}) = \frac{24 \div 12}{60 \div 12} = \boxed{\frac{2}{5}}$$

$$P(\text{Twix}) = \frac{16 \div 4}{60 \div 4} = \boxed{\frac{4}{15}}$$

$$P(\text{not kit kat}) = \frac{60 - 8}{60} = \frac{52 \div 4}{60 \div 4} = \boxed{\frac{13}{15}}$$

$$P(\text{SPK or Twix}) = \frac{12 + 16}{60} = \frac{28}{60} = \boxed{\frac{7}{15}}$$

# Favorite Food

Sushi 8

Ramen 12

Lasagna 24

Pizza 36

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total 80

$$P(\text{Ramen}) = \frac{12 \div 4}{80 \div 4} = \boxed{\frac{3}{20}}$$

$$P(\text{not Pizza}) = \frac{80 - 36}{80} = \frac{44 \div 4}{80 \div 4}$$

$$\boxed{\frac{11}{20}}$$

$P(\text{sushi or lasagna})$

$$\frac{8 + 24}{80} = \frac{32 \div 16}{80 \div 16} = \boxed{\frac{2}{5}}$$

$P(\text{Lasagna})$

$$\frac{24 \div 8}{80 \div 8} = \boxed{\frac{3}{10}}$$