

1.) Find the unit rate.

a) 84 donuts eaten over 6 hours.

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

b) Nate was arrested 82 times over 6 days.

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

$$13.7 \frac{\text{arrests}}{\text{day}}$$

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

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

$$\frac{8n}{8} = \frac{40}{8}$$

$$n = 5$$

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

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

$$\frac{2x}{2} = \frac{54}{2}$$

$$x = 27$$

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

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

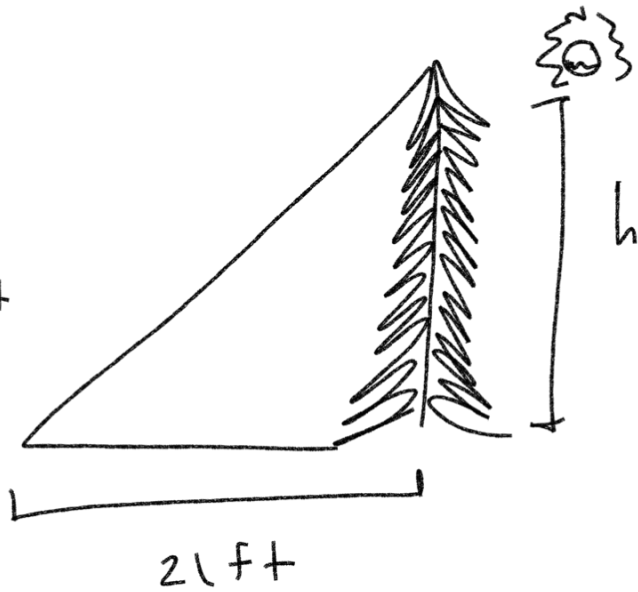
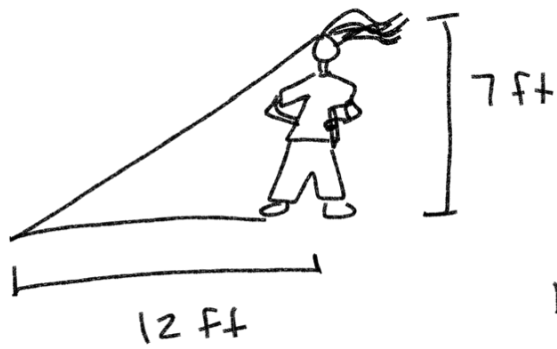
$$\frac{5r}{5} = \frac{80}{5}$$

$$r = 16$$

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

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

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



$$\frac{\text{Height} \rightarrow 7 \text{ ft}}{\text{shadow} \rightarrow 12 \text{ ft}} = \frac{h}{21 \text{ ft}}$$

Nate

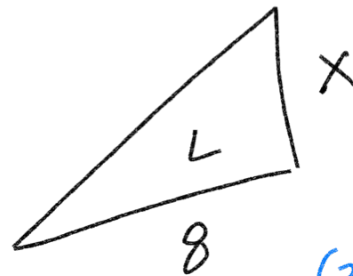
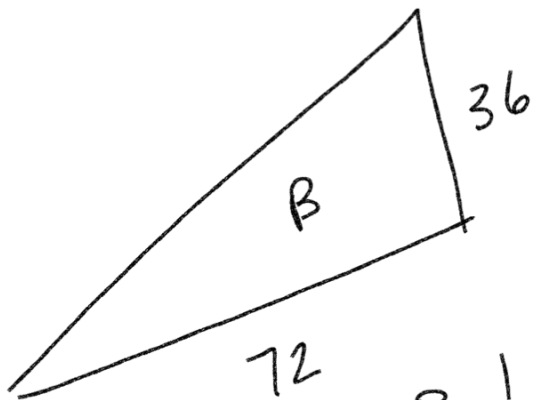
$$\frac{7}{12} \neq \frac{h}{21}$$

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

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

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

Similar Figures



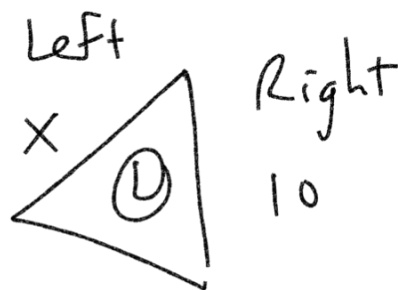
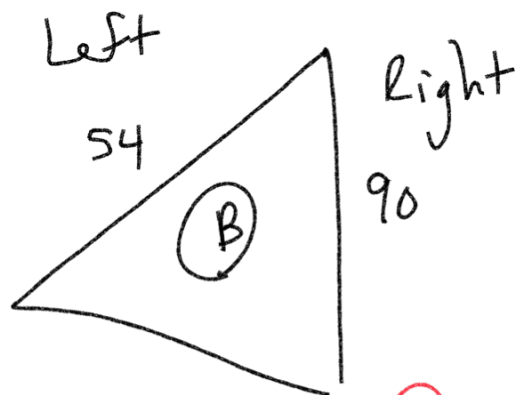
$$\frac{\text{Height}}{\text{Base}} = \frac{\text{Big'n } 36}{72} \neq \frac{\text{Lil'n } x}{8}$$

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

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

$$4 = x$$

# Similar Triangles



(B) (L)

$$\frac{\text{Left}}{\text{Right}} = \frac{54}{90} = \frac{X}{10}$$

$$(54)(10) = 90X$$

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

$$\boxed{6 = X}$$

## Probability

Twix 16

Snickers 12

Milky Way 8

Reese's 24

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total 60



# of desired outcomes

total # of outcomes

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

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

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

$$P(\text{Snickers or Twix}) = \frac{12 + 16}{60} = \frac{28 \div 4}{60 \div 4}$$

$$P(\text{Twizzlers}) = \boxed{0} \quad \boxed{\frac{7}{15}}$$

# Favorite Food

Mac N' Cheese 12

Pizza 36

Pasta 8

Hamburger 24

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total 80

$$P(\text{Mac N' cheese}) \quad \begin{array}{l} \text{num} \div \text{den} \\ \text{top} \div \text{bot} \end{array}$$
$$\frac{12 \div 4}{80 \div 4} = \frac{3}{20} = 0.15$$

$$P(\text{not pizza})$$
$$\frac{80 - 36}{80} = \frac{44 \div 4}{80 \div 4} = \frac{11}{20}$$

$$P(\text{pasta or hamburgers})$$
$$\frac{8 + 24}{80} = \frac{32 \div 16}{80 \div 16} = \frac{2}{5}$$

$$P(\text{hamburgers})$$
$$\frac{24 \div 4}{80 \div 4} = \frac{6 \div 2}{20 \div 2} = \frac{3}{10}$$
$$\frac{24 \div 8}{80 \div 8} = \frac{3}{10}$$