

TH-A1 Algebra 1 2/9

Ratios  $\rightarrow$  Rational  $\rightarrow$  number able to be put into a fraction.

$$\text{Fraction} = \frac{\text{part}}{\text{whole}}$$

Ratio = part : part

fraction  
in-person  $\frac{8}{13}$

in-person: 8  
online: 5

ratio  
in-person : online  
8 : 5

Dogs : 24      cats : 16  
 $\frac{24}{8} : \frac{16}{8}$       3 : 2

Super Bowl

Chiefs +105  
Eagles -125

\$125  $\rightarrow$  \$100

bet  $\frac{\$125}{\$100} = \frac{\$500}{X}$

$$\frac{125X}{125} = \frac{(100)(500)}{125}$$

$$X = \frac{(100)(500)}{125}$$

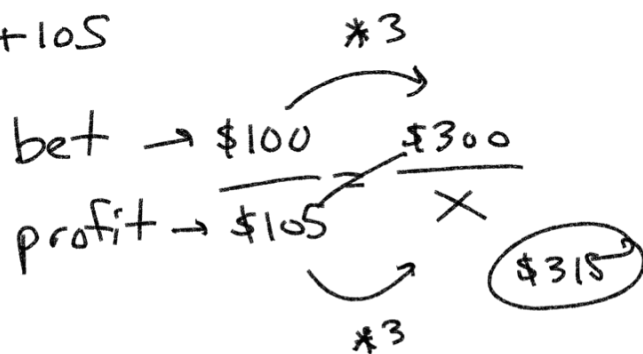
$\$500$

$$\frac{(\$100)(\$500)}{\$125} = \frac{50000}{125}$$

$\$400$

\$300 on Chiefs +105

$$\frac{(105)(300)}{100} = \boxed{315}$$



Eagles

bet  $\frac{125}{100} \xrightarrow{\times} \frac{x}{2000}$

profit  $\frac{125}{100}$

$$\frac{(125)(2000)}{100} = \boxed{\$2500}$$

### MVP

- Mahomes +130
- Hurts +140
- Kelce +1200
- AJ Brown +1800

bet 100

profit 130

$$\frac{16}{24} \times \frac{x}{15}$$

$$(16)(15) = 24x$$

$$\frac{240}{24} = \frac{24x}{24}$$

$$\boxed{10 = x}$$

$$\frac{7}{x-8} \times \frac{4}{8}$$

$$(8)(7) = 4(x-8)$$

$$56 = 4x - 32$$

+32                      +32

$$\frac{88}{4} = \frac{4x}{4} \quad \boxed{x=22}$$

$$1.) \quad \frac{12}{20} \times \frac{X}{50}$$

$$\frac{20X}{20} = \frac{600}{20}$$

$$\boxed{X=30}$$

$$\frac{7}{X+6} \times \frac{5}{X+8}$$

$$7(X+8) = 5(X+6)$$

$$7X + 56 = 5X + 30$$

$$\quad -56 \quad -56$$

$$2X = -26$$

$$\frac{2X}{2} = \frac{-26}{2}$$

$$\boxed{X=-13}$$

$$2.) \quad \frac{5}{4} \times \frac{n-4}{3}$$

$$(5)(3) = 4(n-4)$$

$$(5)(3) = 4n - 16$$

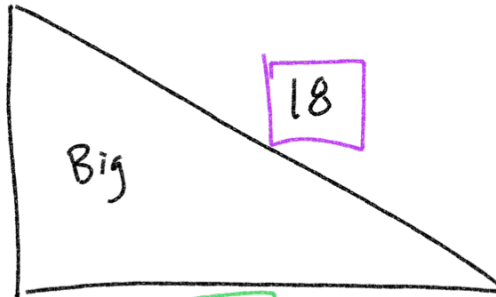
$$15 = 4n - 16$$

$$+16 \quad +16$$

$$\frac{31}{4} = \frac{4n}{4}$$

$$\boxed{n = \frac{31}{4}}$$

Similar



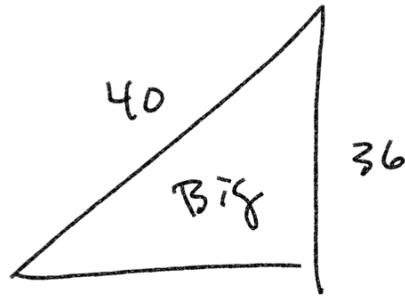
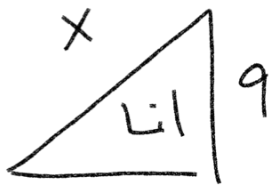
$$\frac{\text{Base Lil}}{\text{Hyp Lil}} = \frac{\text{Base Big}}{\text{Hyp Big}}$$

$$8 \times \frac{X}{9} = \frac{16}{18}$$

$$18X = (16)(9)$$

$$\frac{18X}{18} = \frac{144}{18}$$

$$\boxed{X=8}$$

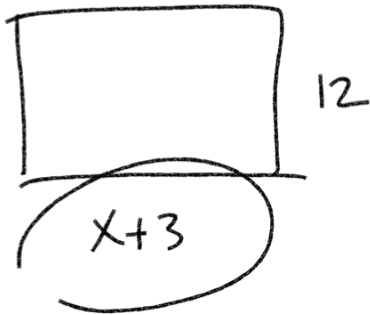


$$\Rightarrow \frac{\text{Hyp Lil}}{\text{Height Lil}} = \frac{\text{Hyp B}}{\text{Height B}} \quad (9)(40) = 36x$$

$$\frac{x}{9} \times \frac{40}{36}$$

$$\frac{360}{36} = \frac{36x}{36}$$

$$\boxed{10 = x}$$



$$\frac{x+3}{12} \times \frac{2x+1}{18}$$

$$18(x+3) = 12(2x+1)$$

$$18x + 54 = 24x + 12$$

$$\begin{array}{r} -18x \\ \hline 54 = 6x + 12 \end{array}$$

$$\begin{array}{r} -12 \\ \hline 42 = 6x \end{array}$$

$$\frac{42}{6} = \frac{6x}{6} \quad \boxed{x=7}$$