

# Proportion

$$\frac{3}{4} = \frac{x}{20}$$

(Note: Blue arrows show 3 multiplied by 5 to get 15, and 4 multiplied by 5 to get 20.)

$$\frac{3}{4} = \frac{x}{20}$$

(Note: The equation is crossed out with purple and green lines.)

$$4x = 3(20)$$

$$4x = \frac{60}{4}$$

$$x = 15$$

$$\frac{3}{4} = \frac{15}{20}$$

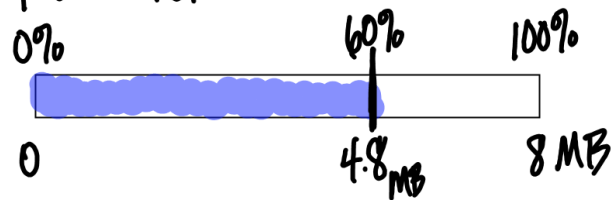
(Note: The equation is crossed out with purple and green lines. The number 60 is written in green above the 15 and below the 20.)

3:4 as 15:20

means

extremes

## 4.2 Percent Problems



Proportion  $\frac{60}{100} = \frac{x}{8}$   $\frac{\text{part}}{\text{whole}}$

$$\frac{3}{5} = \frac{x}{8} \quad \frac{\text{part}}{\text{total}}$$

$$\frac{5x}{5} = \frac{24}{5}$$

$$x = 4\frac{4}{5} = 4.8$$

60% of 8 MB downloaded

$$.6(8)$$

$$4.8$$

What is 60% of 8?

$$x = .6(8)$$

$$x = 4.8$$

$529\%$  $5.29$  $.001\%$  $.00001$  $.00001$

Find 35% of 80

$$x = .35(80)$$

$$x = 28$$

$$\begin{array}{r} .35 \\ \times 80 \\ \hline 28.00 \end{array}$$

$$\frac{35}{100} = \frac{x}{80}$$

$$\frac{7}{20} = \frac{x}{80}$$

→

0% 10% 20% 30% 40% 50%

$x = 28$  100%



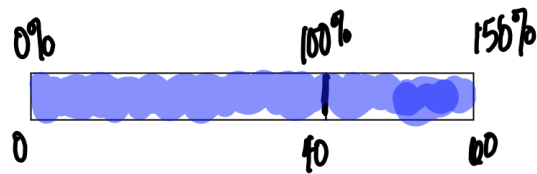
What percent of 40 is 60

$$x(40) = 60$$

$$\frac{40x}{40} = \frac{60}{40}$$

$$x = \frac{3}{2} = 1\frac{1}{2} = 1.5$$

150%



What percent of 40 is 60?

$$\frac{x}{100} = \frac{60}{40} \quad \begin{array}{l} \text{part} \\ \text{whole} \end{array}$$

$$\frac{x}{100} = \frac{3}{2}$$

Two blue curved arrows labeled 'xcp' indicate cross-multiplication: one from the top 'x' to the bottom '2', and another from the bottom '100' to the top '3'.

$$\frac{150}{100}$$

150%

48 is 40% of what number?

$$48 = .4x$$

$$\frac{48}{120} = \frac{40}{100}$$

$$\frac{48}{.4} = \frac{.4x}{.4}$$

$$\frac{480}{4} = \frac{480}{4}$$

$$120 = x$$

48 is 40% of what number?

$$\frac{40}{100} = \frac{48}{x}$$

$$\frac{4}{10} = \frac{48}{x}$$

$$\frac{2}{5} = \frac{48}{x}$$

$$x = 120$$

p 176

24 - 60 E