

Ratios, Rates and Proportions



Overview of problems



Example Set: A



Write each ratio as a fraction in simplest form

12 girls to 20 boys

5 Ford trucks to 30 pick ups

3 trout out of 17 fish

80 cents out of 4 dollars



Find each unit rate

50 gallons in 10 minutes

120 meters in 60 seconds

24 cans of soda for \$3



Example Set: B

Determine if each pair of ratios form a proportion

$$\frac{2}{3} = \frac{8}{12}$$

$$\frac{6.2}{3.4} = \frac{10.6}{4.8}$$

$$\frac{16}{5} = \frac{48}{15}$$

Solve each proportion

$$\frac{x}{7} = \frac{4}{10}$$

$$\frac{60}{m} = \frac{5}{2}$$

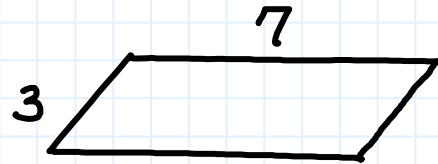
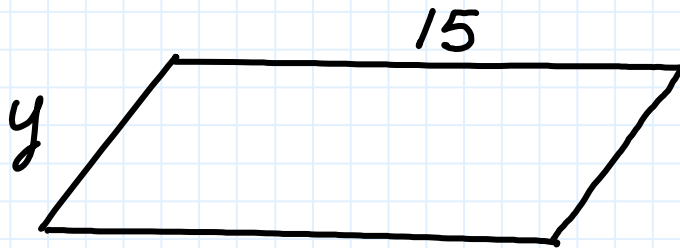
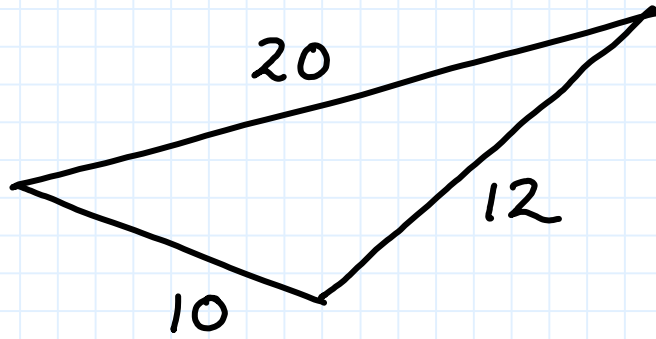
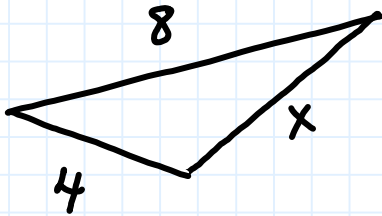
$$\frac{3}{4} = \frac{d}{14}$$

$$\frac{9.2}{4.3} = \frac{3.9}{t}$$



Example Set: C

Each pair of figures are similar. Find the missing length



Example Set: D

A child spots 2 BMWs for every 15 cars that drive by his house. At this rate how many BMWs will the child see if 300 cars pass?

A pole casts a shadow 10 ft. long. A 5 foot man casts a shadow 4 ft. long. Draw two similar triangles to model the situation and find the height of the pole

Ratios, Rates and Proportions



Overview of problems- KEY



Example Set: A



Write each ratio as a fraction in simplest form

12 girls to 20 boys

3 girls / 5 boys

5 Ford trucks to 30 pick ups

1 Ford truck / 6 pick ups

3 trout out of 17 fish

3 trout / 17 fish

80 cents out of 4 dollars

1 cent / 5 cents



Find each unit rate

50 gallons in 10 minutes

5 gal / min

120 meters in 60 seconds

2 m / sec

24 cans of soda for \$3

8 cans / \$



Example Set: B

Determine if each pair of ratios form a proportion

$$\frac{2}{3} = \frac{8}{12}$$

proportion

$$\frac{6.2}{3.4} = \frac{10.6}{4.8}$$

not a proportion

$$\frac{16}{5} = \frac{48}{15}$$

proportion

Solve each proportion

$$\frac{x}{7} = \frac{4}{10}$$

$$x = 2.8$$

$$\frac{60}{m} = \frac{5}{2}$$

$$m = 24$$

$$\frac{3}{4} = \frac{d}{14}$$

$$d = 10.5$$

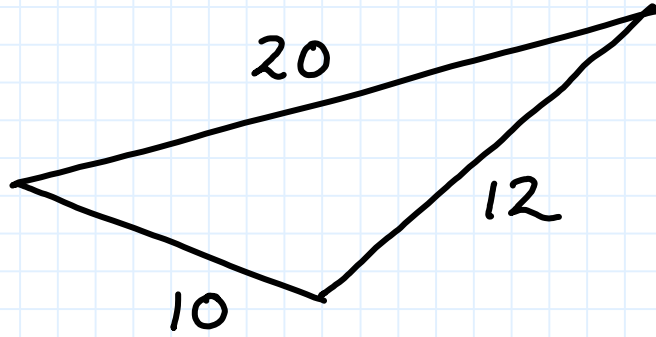
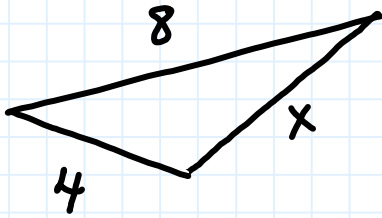
$$\frac{9.2}{4.3} = \frac{3.9}{t}$$

$$t = 1.82$$

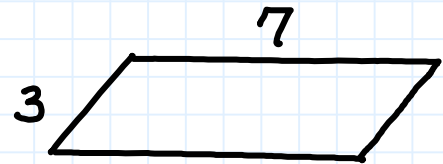
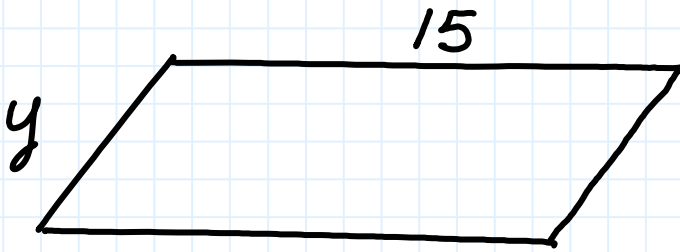


Example Set: C

Each pair of figures are similar. Find the missing length



$$x = 4.8$$



$$y = 6.42$$

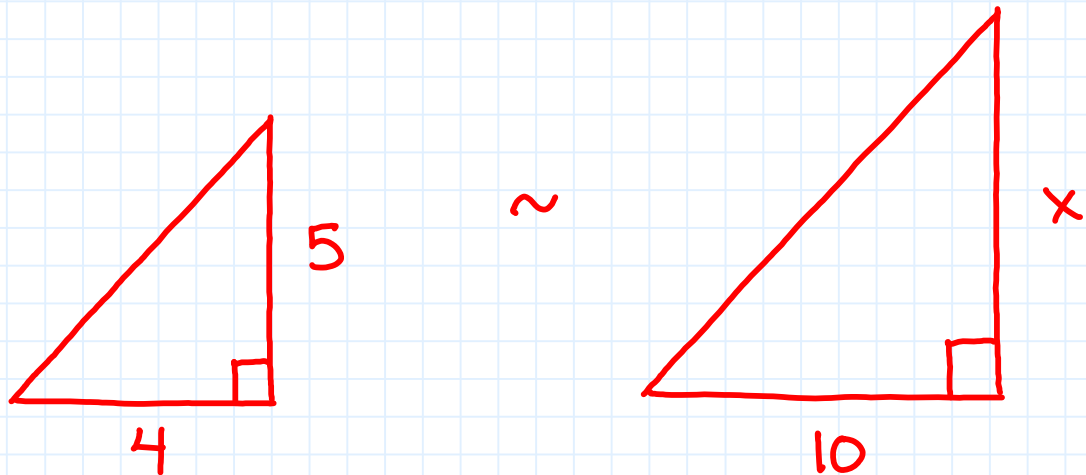


Example Set: D

A child spots 2 BMWs for every 15 cars that drive by his house. At this rate how many BMWs will the child see if 300 cars pass?

40 BMWs

A pole casts a shadow 10 ft. long. A 5 foot man casts a shadow 4 ft. long. Draw two similar triangles to model the situation and find the height of the pole



$$x = 12.5'$$