

4.3 Ratios & Proportions

Directions: Solve for x.

$$1) \frac{3}{x} = \frac{7}{14}$$

$$7x = 42$$

$$x = 6$$

$$2) \frac{7}{x-4} = \frac{3}{5}$$

$$35 = 3x - 12$$

$$47 = 3x$$

$$x = \frac{47}{3}$$

$$3) \frac{4}{x} = \frac{x}{16}$$

$$x^2 = 64$$

$$x = \pm 8$$

Directions: Solve for each problem.

4) Given two squares with sides 5 and 7, what is the ratio of their perimeters?



$$20 : 28$$

$$10 : 14$$

$$5 : 7$$

5) Given two squares with sides 5 and 7, what is the ratio of their areas?

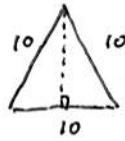
$$25 : 49$$

6) Given two equilateral triangles with sides 6 & 10, what is the ratio of their perimeters?

$$18 : 30$$

$$6 : 10$$

$$3 : 5$$



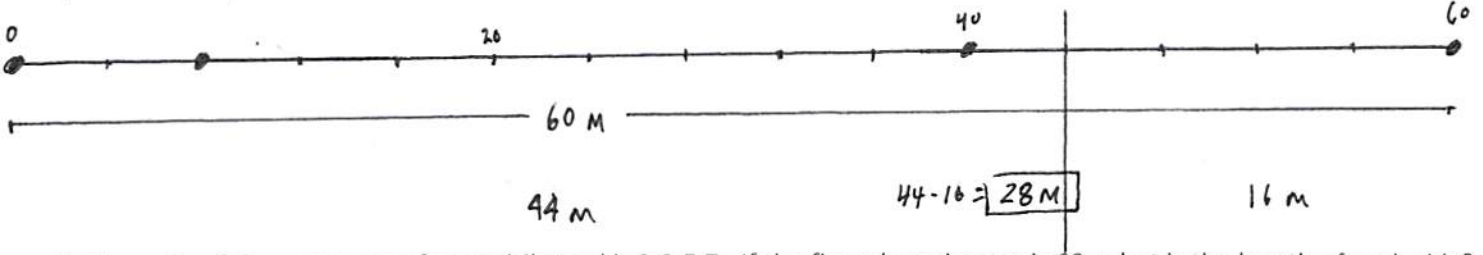
7) Given two equilateral triangles with sides 6 & 10, what is the ratio of their areas?

$$A_6 = \frac{1}{2}(6)(3\sqrt{3}) = 9\sqrt{3}$$

$$A_{10} = \frac{1}{2}(10)(5\sqrt{3}) = \frac{25\sqrt{3}}{2}$$

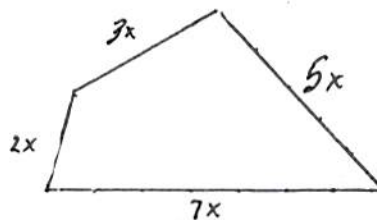
$$9\sqrt{3} : \frac{25\sqrt{3}}{2}$$

8) A 60 meter pole is cut into two parts in the ratio of 11 to 4. How much longer is the longer part than the shorter?



9) The ratio of the measures of a quadrilateral is 2:3:5:7. If the figure's perimeter is 68, what is the length of each side?

$$8, 12, 20, 28$$



$$2x + 3x + 5x + 7x = 68$$

$$17x = 68$$

$$x = 4$$

10) The length of a model plane is $10\frac{1}{2}$ in. The scale of the model is 1:72. What is the length of the real plane?

$$\frac{10.5}{1} = \frac{x}{72}$$

$$x = 756 \text{ in} \approx 63 \text{ ft}$$

ALSO: DON'T FORGET TO DO PAGE 249 - 250 #'s 1 - 10, 19, & 20

Similar Polygons Challenge!

1) Solve for x: $\frac{8}{x+7} = \frac{2}{x+1}$

$$8(x+1) = 2(x+7)$$

$$8x+8 = 2x+14$$

$$6x = 8$$

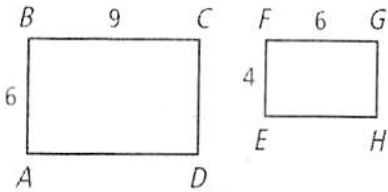
$$x = \frac{8}{6} = \frac{4}{3}$$

2) A stick that is 40 ft. long is cut into two parts in the ratio of 7:3. What is the length of the longer part?



28 ft

3) Are the following rectangles similar? tenth?



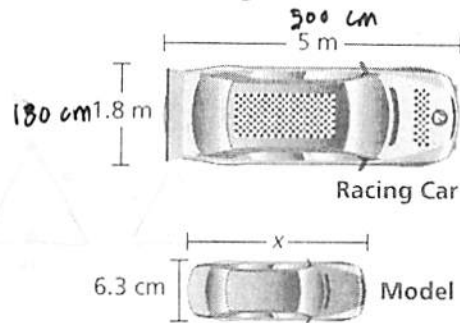
$$\frac{6}{4} = \frac{9}{6}$$

3:2

$$36 = 36$$

yes

4) What is the length of the model car to the nearest



$$\frac{6.3}{x} = \frac{180}{500}$$

$$180x = 3150$$

$$x = 17.5 \text{ cm}$$

5) The ratio of the measures of a quadrilateral is 2:3:4:5. If the perimeter is 112 feet, what is the length of each side?

$$2x + 3x + 4x + 5x = 112$$

$$14x = 112$$

$$x = 8$$

16, 24, 32, 40

