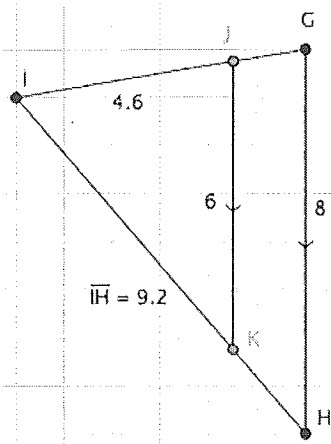


Grade 9 Math - Chapter 4 Review Worksheet

1. Determine the length of HK.



$$\frac{6}{8} = \frac{IK}{9.2}$$

$$IK = 6 \times 9.2 \div 8$$

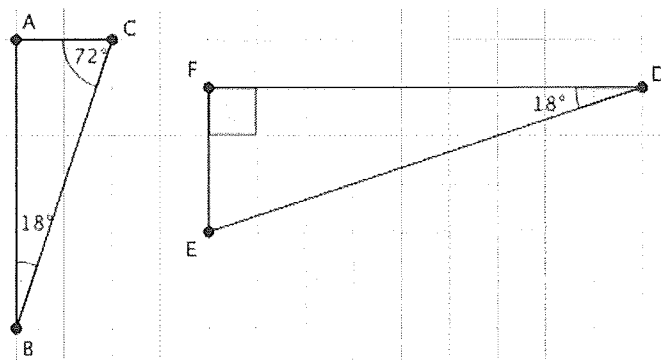
$$= 6.9$$

$$HK = IH - IK$$

$$= 9.2 - 6.9$$

$$= 2.3 \text{ units.}$$

2. Are these similar triangles? Explain.



$$\angle E = 180^\circ - 90^\circ - 18^\circ$$

$$= 72^\circ$$

$$\angle A = 180^\circ - 72^\circ - 18^\circ$$

$$= 90^\circ$$

$\triangle BAC \sim \triangle DFE$ because
corresponding angles are equal

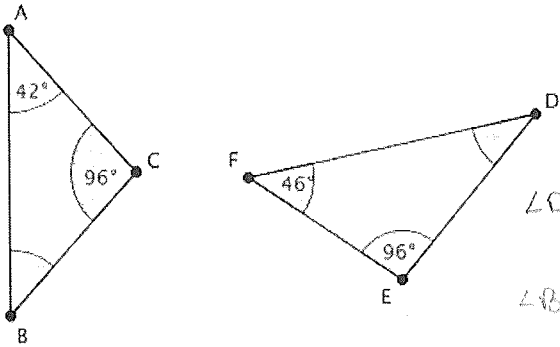
3. For triangles to be similar what do you know about their angles, and their sides?

Corresponding angles are equal

Corresponding sides are proportional

4. Are these triangles similar? Explain.

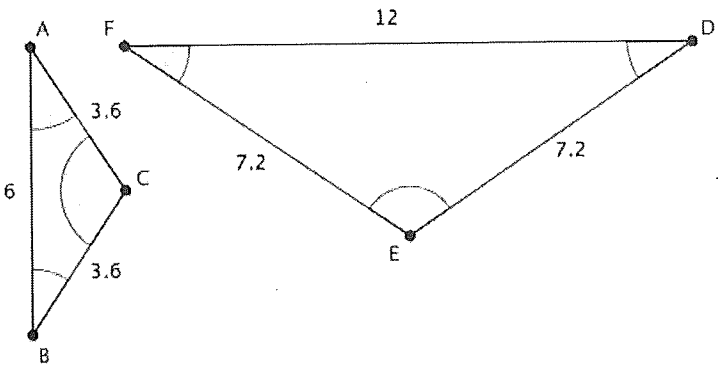
a)



$$\begin{aligned} \angle D &= 180 - 96 - 46 \\ &= 38 \\ \angle B &= 180 - 96 - 42 \\ &= 42 \end{aligned}$$

Not similar since corresponding angles are not equal

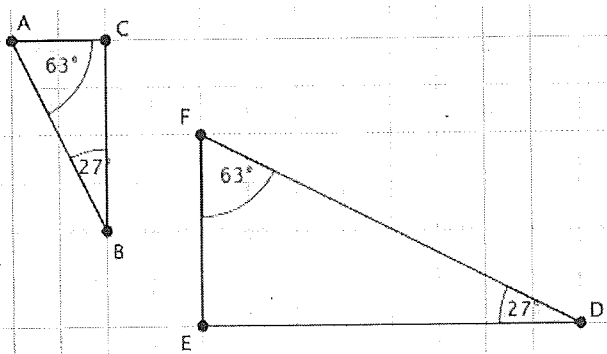
b)



$$\begin{aligned} \frac{12}{6} &= 2 \\ \frac{7.2}{3.6} &= 2 \end{aligned}$$

$\triangle ABC \sim \triangle FED$ since corresponding sides are proportional

c)



$$\begin{aligned} \angle C &= 180 - 27 - 63 \\ &= 90^\circ \\ \angle E &= 180 - 27 - 63 \\ &= 90^\circ \end{aligned}$$

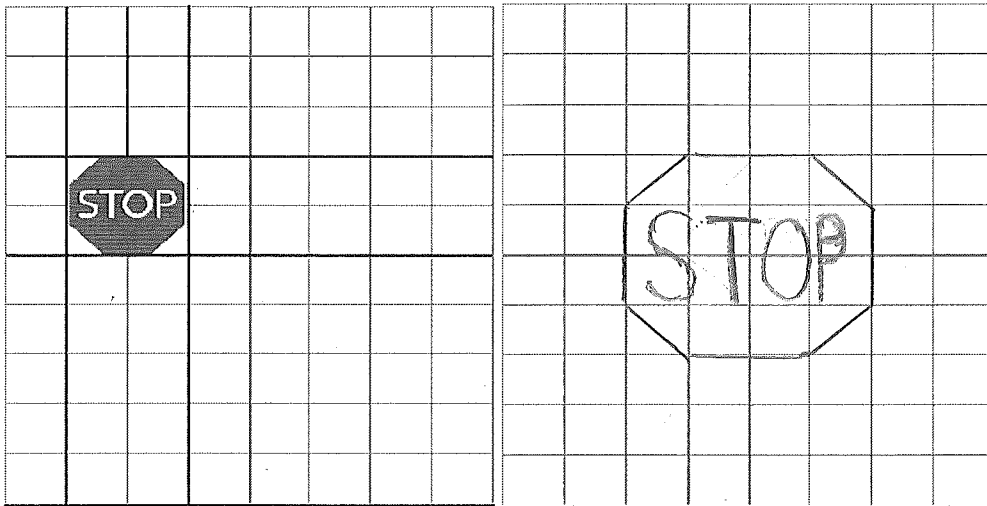
$\triangle ABC \sim \triangle FED$ since corresponding angles are equal

6. The tallest coast Douglas fir measures 94m. Wonita drew a picture of it that measures 11cm tall. Determine the scale factor.

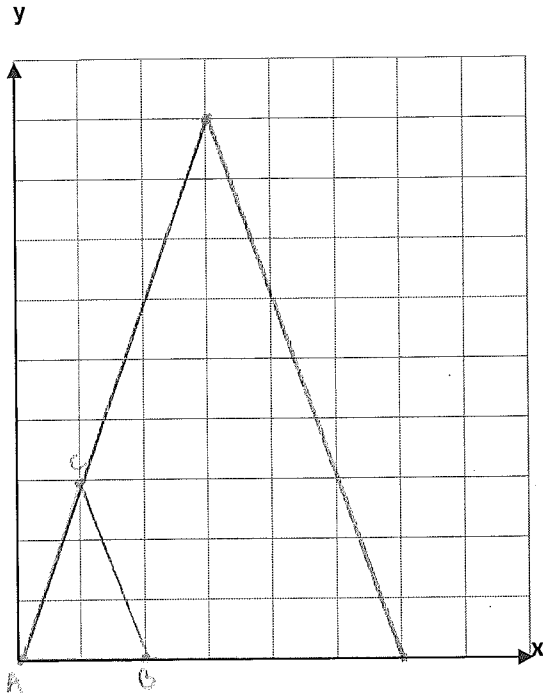
$$\frac{\text{drawing}}{\text{actual}} = \frac{11}{9400} = \frac{1}{854.55}$$

$$94\text{m} = 9400\text{cm}$$

7. Use a scale factor of 2 to draw an enlargement of the figure below.



8. Draw $\triangle ABC$ with vertices $A(0,0)$, $B(2,0)$ and $C(1,3)$. Draw a scale diagram of $\triangle ABC$ with a scale factor of 3 and one vertex at $(0,0)$.



9. A toy truck is a scale replica of an actual truck. If the toy truck is 13 cm in length and a scale of 1:50, how long is the actual truck?

$$\frac{D}{A} = \frac{1}{50} = \frac{13}{x}$$

$$x = 13 \times 50 \\ = 650 \text{ cm}$$

The truck is 650 cm long

10. Metric Conversions:

King Henry died, Mary didn't care much

Kilo, Hecto, Deca, (Meter, gram, litre), Deci, Centi, Milli

Move to the right, move the decimal to the right; move to the left, move the decimal to the left.

Convert 6325 m to kilometers.

6.325 km

Convert 45.6 km to meters.

45600

Convert 59 cm to millimeters.

590 mm

Convert 2890 cm to meters.

28.9 m

⁻² Convert 15 cm to kilometers.

0.00015

³ 0.00015 km

¹ Convert 32.56 dam to decimeters

⁻¹ 3256 dm

Convert 7255 mm to centimeters

725.5 cm

Convert 32.5 cm to meters

0.325 m

Proportions:

Solve each proportion for the indicated variable. Show all steps.

1. $\frac{2}{5} = \frac{4}{x}$

$$\frac{2x}{2} = \frac{20}{2}$$

$$x = 10$$

2. $\frac{3}{4} = \frac{x}{12}$

$$x = 3 \times 12 \div 4$$
$$= 9$$

3. $\frac{5}{y} = \frac{10}{12}$

$$y = 5 \times 12 \div 10$$
$$= 6$$

4. $\frac{21}{30} = \frac{m}{10}$

$$m = 10 \times 21 \div 30$$
$$= 7$$

5. $\frac{14}{16} = \frac{21}{x}$

$$x = 21 \times 16 \div 14$$
$$= 24$$

6. $\frac{27}{15} = \frac{x}{20}$

$$x = 20 \times 27 \div 15$$
$$= 36$$

7. $\frac{t}{9} = \frac{20}{45}$

$$t = 20 \times 9 \div 45$$
$$= 4$$

8. $\frac{7}{3} = \frac{35}{f}$

$$f = 3 \times 35 \div 7$$
$$= 15$$

9. $\frac{n}{10} = \frac{45}{25}$

$$n = 10 \times 45 \div 25$$
$$= 18$$

10. $\frac{80}{15} = \frac{w}{60}$

$$w = 80 \times 60 \div 15$$
$$= 320$$