Name: _____ Date: _____

adapted from: BLM 4–13

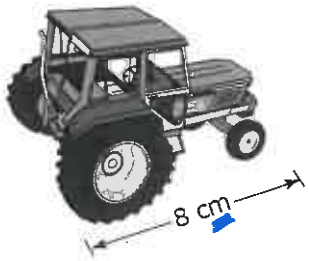
Chapter 2 PRACTICE

Scale Factors & Similarity

1. A local farm equipment dealership sells toy tractors that are 8 cm long. The length of the actual tractor is 5.6 m. What is the scale of the reduction (as a ratio)?

5.6 x 100
560 cm

model : actual
8 : 560
÷8 ÷8
1 : 70

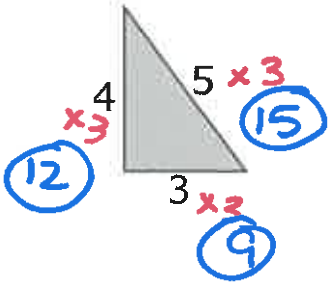


2. A penny has a diameter of 19 mm. Brenda used a scale factor of 3 to create a scale drawing of the penny. What is the diameter of Brenda's drawing?

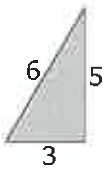
x 3

19 mm x 3 = 57 mm

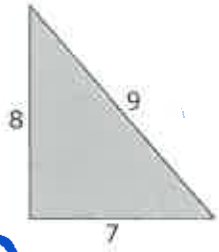
3. Which of the following triangles is similar to the given triangle?



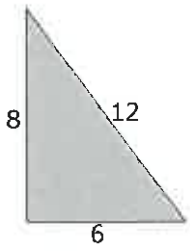
A



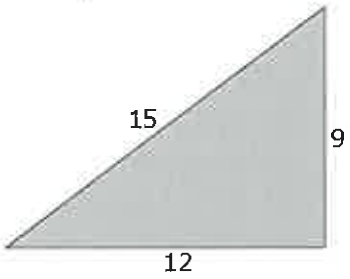
B



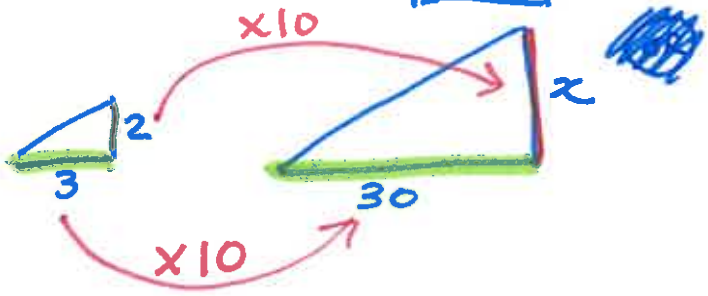
C



D



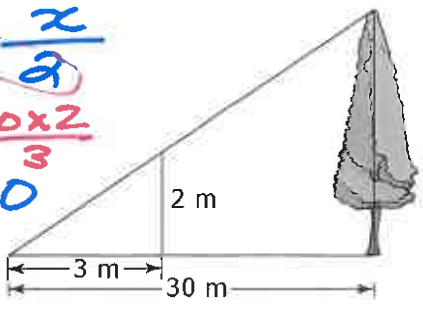
4. Using the information given in the diagram, the height of the actual tree is 20 m.



$\frac{30}{3} = \frac{x}{2}$

$x = \frac{30 \times 2}{3}$

$= 20$



reduction ($\frac{1}{4}$ of actual size)

5. A standard stop sign is 75 cm across from one side of the red octagon to the opposite side, with a 2-cm white border. The letters forming the word STOP are 25 cm tall.

SF = $\frac{1}{4}$ = 0.25

Actual lengths shown.

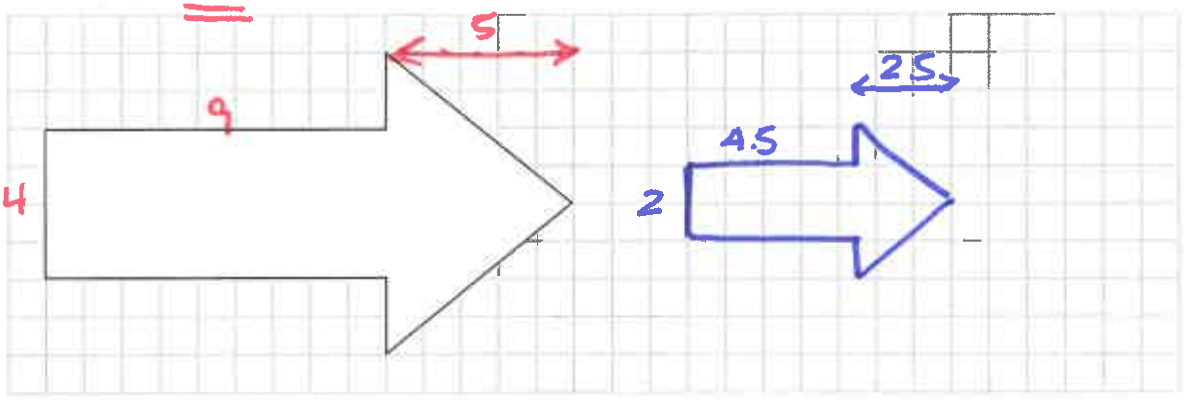
Determine the following dimensions on a 1:4 scale drawing of a stop sign:

OR 75cm × 0.25 = 75cm ÷ 4 =

- Width of octagon: 18.75 cm
- Height of letters: 6.25 cm
- Width of border: 5 mm 2 ÷ 4 = 0.5cm × 10 = 5mm

6. Use a scale factor of 0.5 to draw a reduction of the arrow.

×0.5

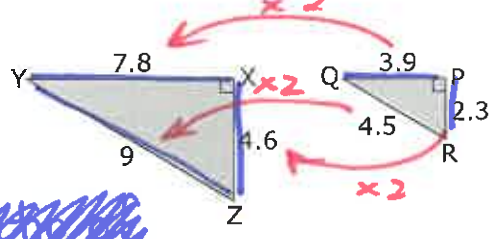


7. Paul's grandfather collects models of ships such as *Bluenose*. The model measures 120 mm in length and the scale used to make the model is 1 : 470. Calculate the length of the actual sailing ship to the nearest tenth of a metre.

actual ship is 470 times bigger than model.

120mm × 470
= 56400 mm
÷10 ÷100
= 56.4m

8. Determine whether or not the two triangles are similar. Show how you know.



$\frac{7.8}{3.9} = \frac{4.6}{2.3} = \frac{9}{4.5}$

2 = 2 = 2

Corresponding sides are proportional
triangles ARE similar
$\triangle XYZ \sim \triangle PQR$