Name: _____ KEY Date: _____

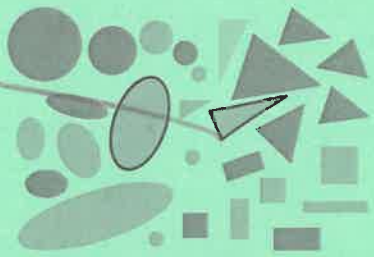
BLM 4–13

Chapter 4 Test

For #1 to 4, choose the best answer.

1. Jason arranged shapes into sets of similar polygons. How many of the shapes in the sets do not appear to be similar to any other shape?

A 5 **B** 4 **C** 3 **D** 0

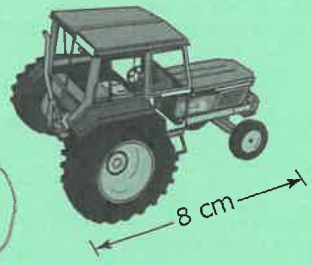


2. A local farm equipment dealership has model tractors. The length of the actual tractor is 5.6 m. What scale factor was used for the reduction?

A $\frac{1}{7}$ **B** 7 **C** 70 **D** 700

E $\frac{1}{70}$

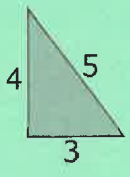
$\frac{d}{A} \frac{8}{560} = \frac{1}{70}$



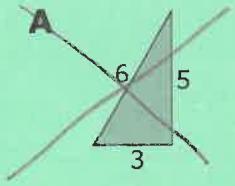
3. A penny has a diameter of 19 mm. Brenda used a scale factor of 3 to create a scale drawing of the penny. Which of the following statements about Brenda's drawing is true?

A Brenda drew an enlargement. The drawing has a diameter of 57 mm.
B Brenda drew an enlargement. The drawing has a diameter of about 6.3 mm.
C Brenda drew a reduction. The drawing has a diameter of 57 mm.
D Brenda drew a reduction. The drawing has a diameter of about 6.3 mm.

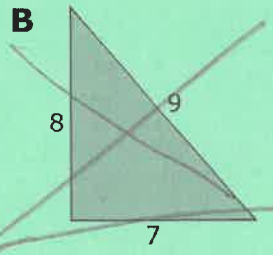
4. Which of the following triangles is similar to the given triangle?



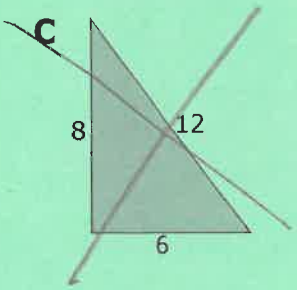
A



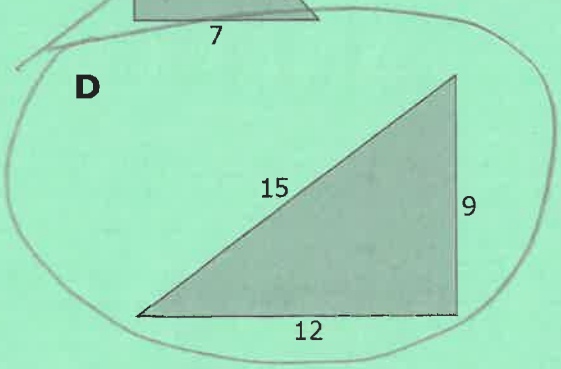
B



C



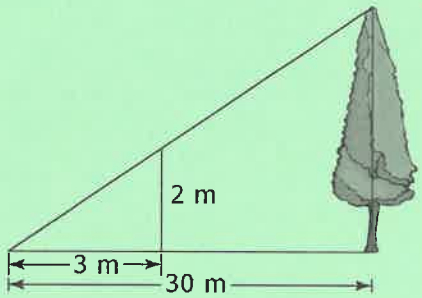
D



Name: KEY Date:

Complete the statements in #5 and 6.

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



BIG Δ / SMALL Δ $\frac{30}{3} = \frac{x}{2} = 20$

6. 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 STOP are 25 cm tall. Using a scale of 14, the entire width of an image of the stop sign is 1106 cm, to the nearest tenth of a centimetre.

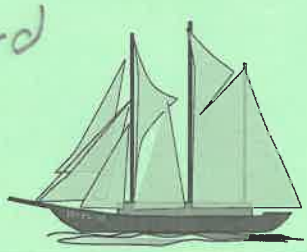
14 : 1

Both sides.

Short Answer $\frac{d}{A} = \frac{14}{1} = \frac{x}{79}$ 1106 cm

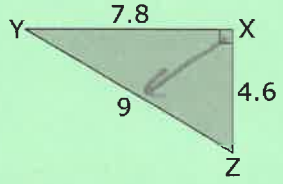
7. Use a scale factor of 0.5 to draw a reduction of this figure.

8. Raul'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. (d) (a) Calculate the length of the actual sailing ship to the nearest tenth of a metre.



Extended Response $\frac{d}{a}\ \frac{1}{470} = \frac{120\text{mm}}{a}$ $a =$ 56 400 mm or 56.4 m

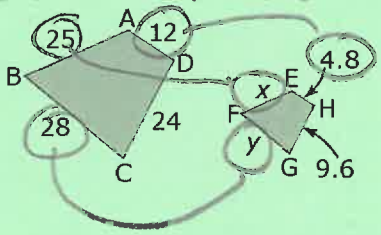
9. Determine if the two triangles are similar. Show your work.



BIG / SMALL $\frac{9}{4.5} = 2$ $\frac{7.8}{3.9} = 2$ $\frac{4.6}{2.3} = 2$

$\triangle YXZ \sim \triangle QPR$ because scale factor is the SAME for each side.

10. Use the two similar trapezoids to determine the missing side lengths, x and y. Show your work.



BIG / SMALL $\frac{12}{4.8} = \frac{25}{x}$ $\frac{12}{4.8} = \frac{28}{y}$

$x = 10$ $y = 11.2$

Math 9 Ratios, Proportions & Scale Diagrams Name Key

Quiz

Solve each proportion for the letter given. Round answers to the nearest tenth if needed. (1 mark each)

1. $7 : D = 1 : 6$

$\frac{7}{D} = \frac{1}{6}$

42

2. $\frac{9}{A} = \frac{5}{3}$

5.4

Solve each problem. Show your work. (2 marks each)

3. If 4 litres of paint are needed to paint 64 fence posts, how many posts can be painted with 5 litres of paint?

$\frac{4L}{64 posts} = \frac{5L}{x}$

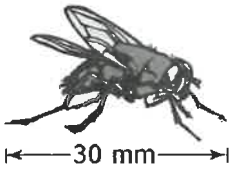
80 posts

4. A virus measures 0.0001 mm in diameter. If a diagram of the virus has a diameter of 5 mm, what was the scale factor used?

$\frac{d}{a} = \frac{5mm}{0.0001} =$

50 000x

5. Calculate the actual length of the object shown in the scale diagram below if the scale is 10:3.



9mm.

$\frac{d}{a} \frac{10}{3} = \frac{30}{x} \quad x = 9mm$