

Name: _____

Date: Key

Chapter 9 Practice Test

1) You need to do a reduction of a picture that is 72cm by 24cm.

a) What are the dimensions of a reduction with a scale factor of $\frac{1}{4}$?

$$S.F. = \frac{SC}{OR} \quad \frac{1}{4} = \frac{x}{72} \quad x = \frac{1 \times 72}{4} = 18 \text{ cm} \quad \frac{1}{4} = \frac{y}{24} \quad y = \frac{1 \times 24}{4} = 6 \text{ cm}$$

18 cm x 6 cm

b) What are the dimensions of a reduction with a scale factor of 0.55?

$$\frac{0.55}{1} = \frac{x}{72} \quad x = \frac{0.55 \times 72}{1} = 39.6 \text{ cm} \quad \frac{0.55}{1} = \frac{y}{24} \quad y = \frac{0.55 \times 24}{1} = 13.2 \text{ cm}$$

39.6 cm by 13.2 cm

c) Suppose you use the original again (72cm by 24cm) and you do an enlargement with a scale factor of $\frac{7}{2}$. What will the dimensions of the enlargement be?

$$\frac{7}{2} = \frac{x}{72} \quad x = \frac{7 \times 72}{2} = 252 \text{ cm} \quad \frac{7}{2} = \frac{y}{24} \quad y = \frac{7 \times 24}{2} = 84 \text{ cm}$$

252 cm by 84 cm

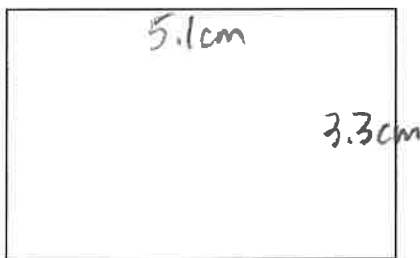
d) Suppose the original length of 72cm is enlarged to 162cm. What is the scale factor? And, what will be the enlarged length of the original width of 24cm?

$$S.F. = \frac{SC}{OR} \quad S.F. = \frac{162}{72} = 2.25 \quad \frac{2.25}{1} = \frac{x}{24} \quad x = \frac{2.25 \times 24}{1} = 54 \text{ cm}$$

2) If an original putter has a length of 80cm and you want to do an enlargement of it for a poster with scale factor $\frac{9}{5}$, what is the length of the putter on the poster?

$$\frac{9}{5} = \frac{x}{80} \quad x = \frac{9 \times 80}{5} = 144 \text{ cm}$$

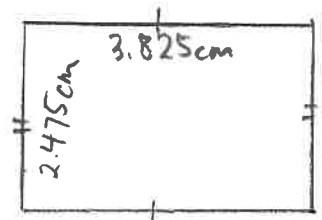
3) Draw a scale diagram using a scale factor of $\frac{3}{4}$. Label the sides (use centimeters).



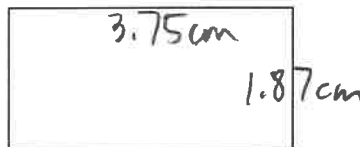
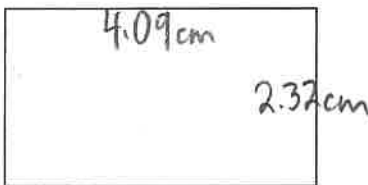
$$S.F. = \frac{SC}{OR}$$

$$\frac{3}{4} = \frac{x}{5.1} \quad x = 3.825 \text{ cm}$$

$$\frac{3}{4} = \frac{y}{3.3} \quad y = 2.475 \text{ cm}$$



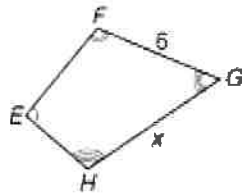
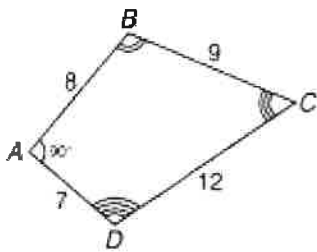
4) Are the following rectangles similar? Use a ruler to check and justify your answer.



$$\frac{4.09}{3.75} = 1.09 \quad \frac{2.32}{1.87} = 1.24$$

X No, they are not similar

5) Determine x. The polygons are similar.

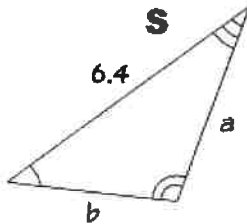
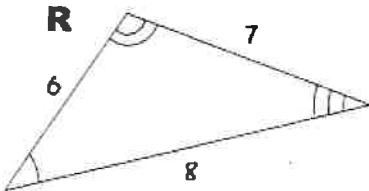


$$\frac{9}{6} = \frac{12}{x}$$

$$x = \frac{6(12)}{9} = 8$$

$x=8$

6) The triangles are similar. Find a and b.



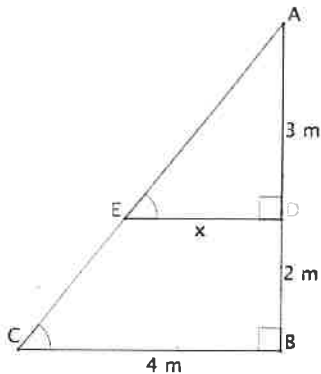
corresponding sides: 6 and b
7 and a
8 and 6.4

$$\frac{8}{6.4} = \frac{7}{a}$$

$$a = \frac{6.4(7)}{8} = \underline{\underline{5.6}}$$

$$b = \frac{6.4(6)}{8} = \underline{\underline{4.8}}$$

7) Find x.



Corresponding sides: AE and AC
AD and AB
3 3+2=5
ED and CB
x 4

$$\frac{3}{5} = \frac{x}{4}$$

$$x = \frac{3(4)}{5} = \underline{\underline{2.4m}}$$

8) Convert each (to the nearest hundredth):

a) 7.2 mi to km

$$7.2 \text{ mi} \times \frac{1.609 \text{ km}}{1 \text{ mi}} = 11.58 \text{ km}$$

b) 46.8 km to mi

$$46.8 \text{ km} \times \frac{1 \text{ mi}}{1.609 \text{ km}} = 29.09 \text{ mi}$$

c) 456 in to yds

$$456 \text{ in} \times \frac{1 \text{ yd}}{36 \text{ in}} = 12.67 \text{ yds}$$

d) 41 ft to m

$$41 \text{ ft} \times \frac{0.3048 \text{ m}}{1 \text{ ft}} = 12.50 \text{ m}$$

e) 65 oz to pounds

$$65 \text{ oz} \times \frac{1 \text{ lb}}{16 \text{ oz}} = 4.06 \text{ lbs.}$$

f) 87 g to oz

$$87 \text{ g} \times \frac{1 \text{ oz}}{28.35 \text{ g}} = 3.07 \text{ oz.}$$

g) 3.4 mi to m

$$3.4 \text{ mi} \times \frac{1760 \text{ yd}}{1 \text{ mi}} \times \frac{0.9144 \text{ m}}{1 \text{ yd}}$$

$$= 5471.77 \text{ m}$$

h) 987 oz to kg

$$987 \text{ oz} \times \frac{1 \text{ lb}}{16 \text{ oz}} \times \frac{0.454 \text{ kg}}{1 \text{ lb}}$$

$$28.01 \text{ kg}$$

i) 8.6 ft to cm

$$8.6 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}}$$

$$= 262.13 \text{ cm}$$