

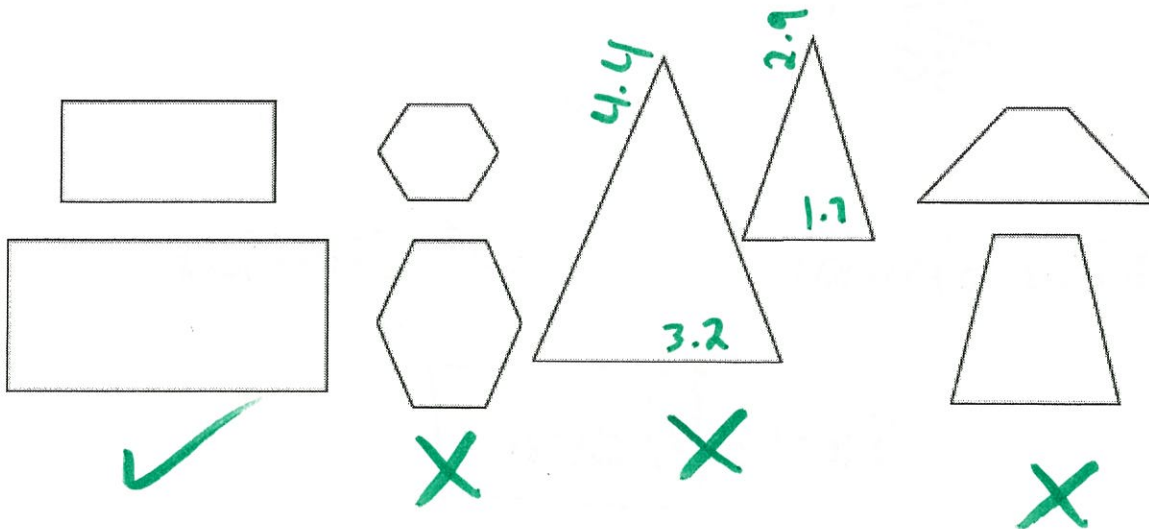
Name: \_\_\_\_\_

Date of test \_\_\_\_\_

## Similar Polygons REVIEW

# KEY

1. Which polygons are similar? Explain.



2. a) Quadrilateral X is a reduction of quadrilateral Y. Quadrilateral X has a side that is 15 cm long. The corresponding side in quadrilateral Y is 52.5 cm long. What is the scale factor?

$$15 \text{ [X]} \quad 52.5 \text{ [Y]} \quad \frac{15}{52.5} \quad \boxed{0.285}$$

b) Quadrilateral X also has a side that measures 20 cm. How long is the corresponding side of quadrilateral Y?

$$\frac{52.5}{15} = \frac{?}{20} \quad \boxed{70\text{cm}}$$

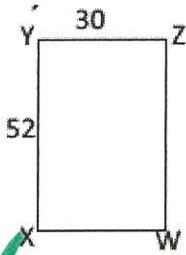
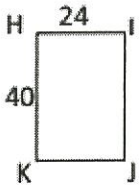
c) Quadrilateral X has an angle that measures  $80^\circ$ . What is the measurement of the corresponding angle in quadrilateral Y?

$80^\circ$

★ similar have SAME angles

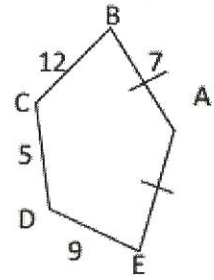
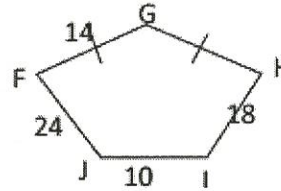
3. Are the following polygons similar? Show by using a similarity ratio.

$$\frac{40}{24} = 1.6$$



$$\frac{52}{30} = 1.73$$

**X Not Similar**



**✓ Similar**

4. A square with a side length of 15cm is enlarged by a scale factor of 4. Determine the side lengths of the new square.



$$15 \times 4 = 60 \text{ cm}$$

5. A rectangle is reduced by a scale factor of 0.6. It's original measurements are 5cm by 7cm.



$$5 \times 0.6 = 3 \text{ cm}$$

$$7 \times 0.6 = 4.2 \text{ cm}$$

a. What are the new dimensions?

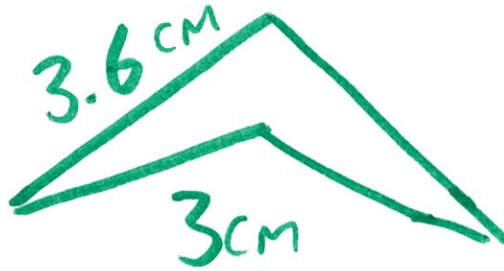
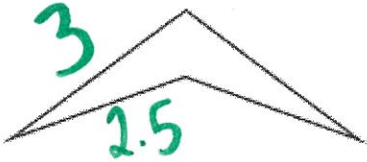
$$3 \times 4.2 \text{ cm}$$

b. What are the measurements of the new angles?

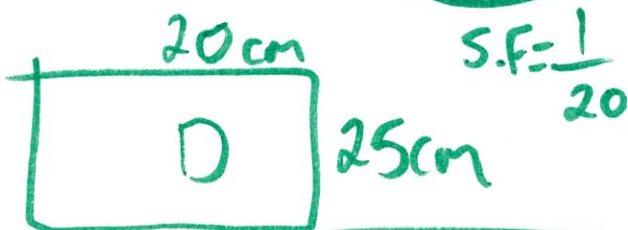
$$90^\circ$$

# \* Assign lengths

6. Draw a similar shape using a scale factor of  $120\% = 1.2$



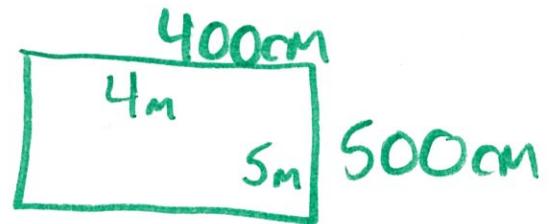
7. On a blueprint, a bedroom has dimensions of 20 cm by 25 cm. The blueprint has a scale factor of 1 : 20. What will the area of the bedroom be?



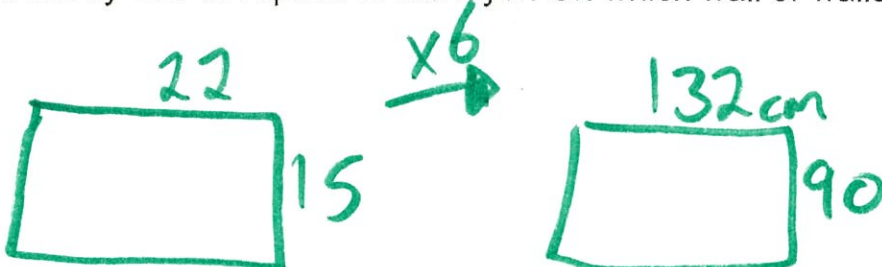
$$S.F. = \frac{1}{20}$$

$$\frac{20}{20} = \frac{1}{20}$$

Area is  $20m^2$

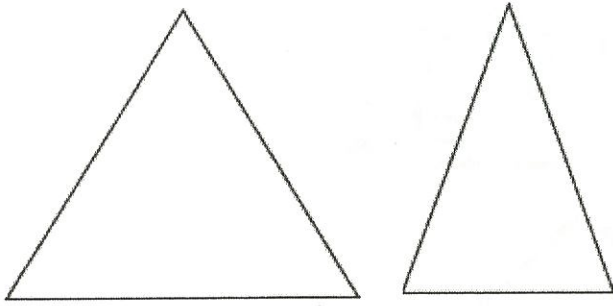


8. The drama club printed posters to advertise the upcoming school play. The poster was designed in a 22 cm by 15 cm rectangle, and the printer will enlarge the design by a scale factor of 6. They want to hang the posters around the school. There is a 160 cm by 90 cm space in the cafeteria, a 140 cm by 75 cm space in the gym, and a 200 cm by 100 cm space in the foyer. On which wall or walls will the poster fit?



\* will fit in Cafeteria and Foyer. NOT the gym.

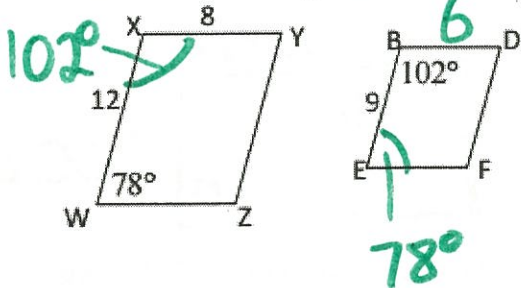
9.



a) Kayla says the two triangles are similar. Is Kayla correct? Explain how you know.

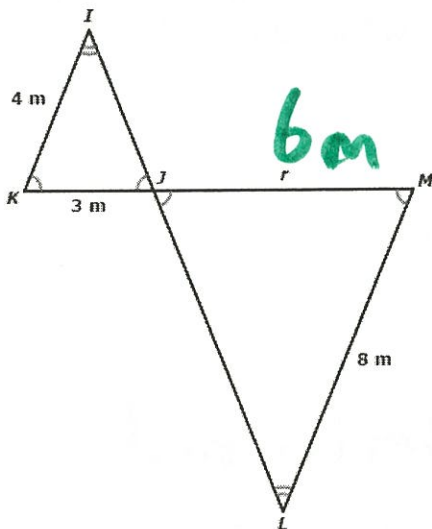
NO - angles and proportions are different

10. Find the missing sides and angles using the properties of similar polygons.



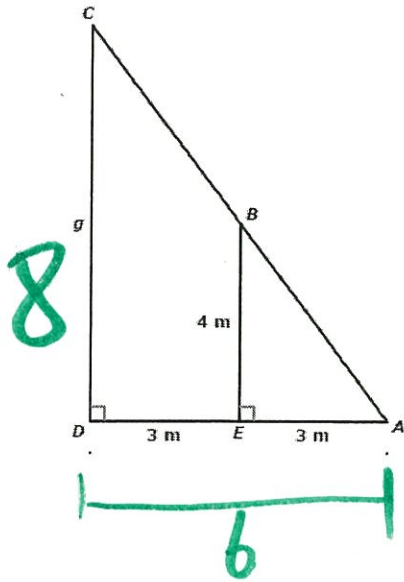
$$\frac{12}{9} = \frac{8}{?} = 6 \text{ cm}$$

11. Find  $r$  in the diagram below.



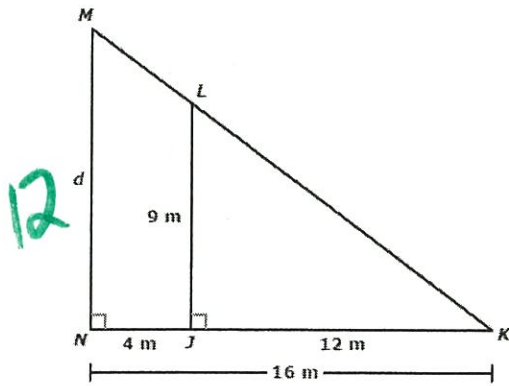
$$\frac{8}{4} = \frac{?}{3}$$

12. Find g.



$$\frac{6}{3} = \frac{?}{4}$$

13. Find d.



$$\frac{16}{12} = \frac{?}{9}$$

