

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

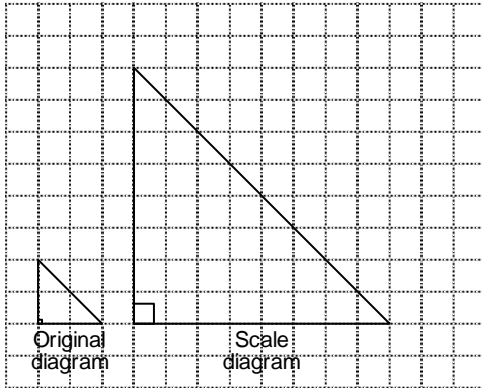
Date: \_\_\_\_\_

## Review for Grade 9 Math Exam - Unit 7 - Similarity and Transformations

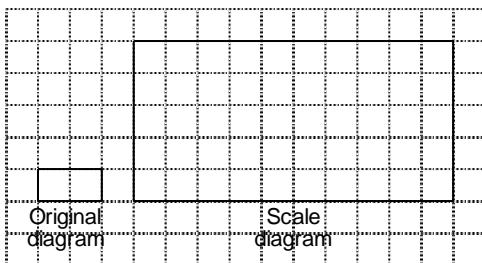
### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_ 1. Determine the scale factor for this scale diagram.

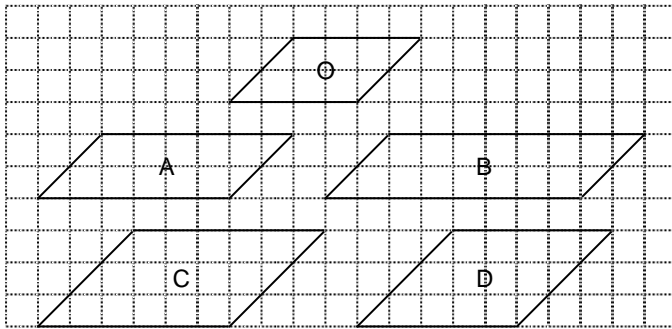


- a. 32                      b. 8                      c. 4                      d.  $\frac{1}{4}$
- \_\_\_ 2. A rectangle has length 6 cm and width 4 cm.  
The rectangle is to be enlarged by a scale factor of 8.  
Calculate the length of the enlargement.  
a. 80 cm                      b. 48 cm                      c. 32 cm                      d. 14 cm
- \_\_\_ 3. Determine the scale factor for this scale diagram.



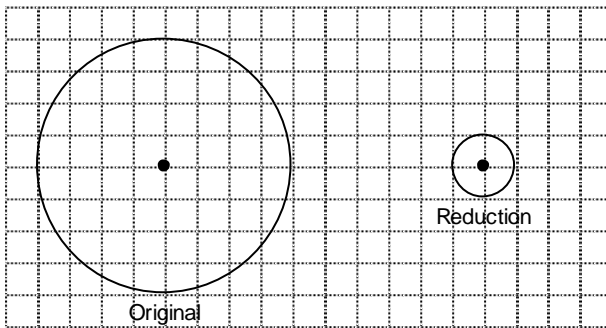
- a. 10                      b.  $\frac{1}{5}$                       c. 5                      d. 15

\_\_\_ 4. Which of parallelograms A, B, C, and D are scale diagrams of parallelogram O?



- a. Parallelogram D    b. Parallelogram C    c. Parallelogram B    d. Parallelogram A

\_\_\_ 5. Determine the scale factor for this reduction.

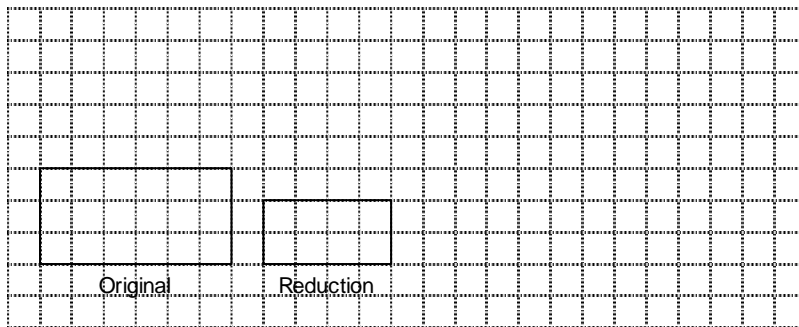


- a. 8                      b. 4                      c.  $\frac{1}{4}$                       d.  $\frac{1}{8}$

\_\_\_ 6. A wheel has diameter 65 cm.  
Determine the diameter on a scale diagram if the scale factor is 0.06.

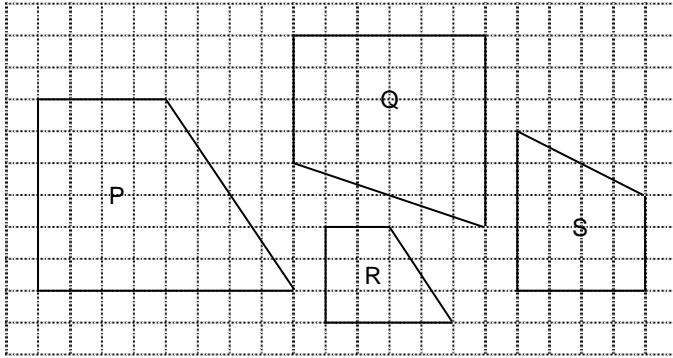
- a. 71 cm                      b. 3.9 cm                      c. 108 cm                      d. 39 cm

\_\_\_ 7. Determine the scale factor for this reduction.



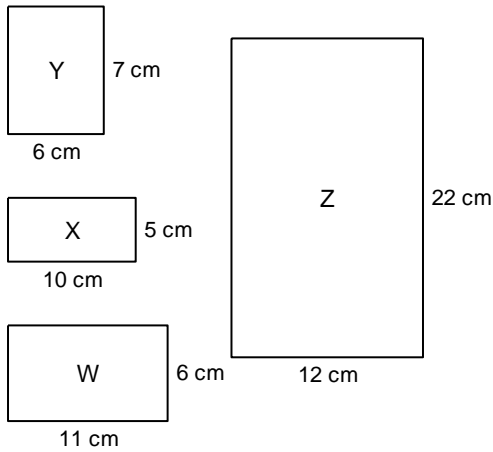
- a.  $\frac{3}{4}$                       b.  $\frac{3}{2}$                       c.  $\frac{1}{2}$                       d.  $\frac{2}{3}$

8. Identify similar quadrilaterals.



- a. P and Q      b. P and R      c. R and S      d. Q and S

9. Identify similar rectangles.

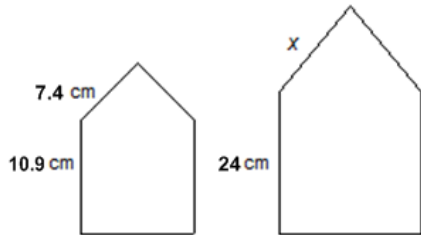


- a. Y and Z      b. X and Z      c. Y and W      d. W and Z

10. Calculate the value of  $r$  in this proportion:  $\frac{r}{26} = \frac{52}{208}$

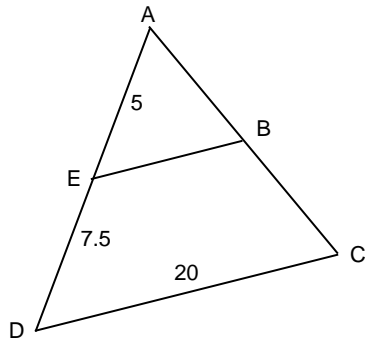
- a. 6      b. 104      c. 416      d. 6.5

\_\_\_ 11. These two pentagons are similar. Determine the value of  $x$ .



- a. 13.1 cm      b. 20.5 cm      c. 16.29 cm      d. 18 cm

\_\_\_ 12. Determine the length of EB in this pair of similar triangles.

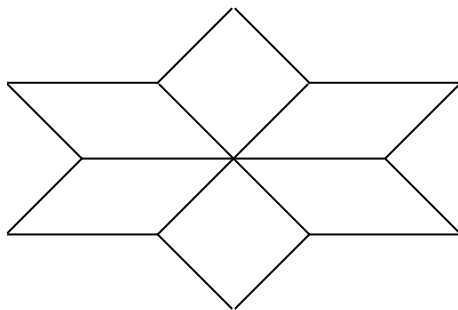


- a. 13.3      b. 10      c. 8      d. 5

\_\_\_ 13. When the shadow of a flagpole is 33.6 m long, a 1.8-m fencepost casts a shadow 2.8 m long. How tall is the flagpole?

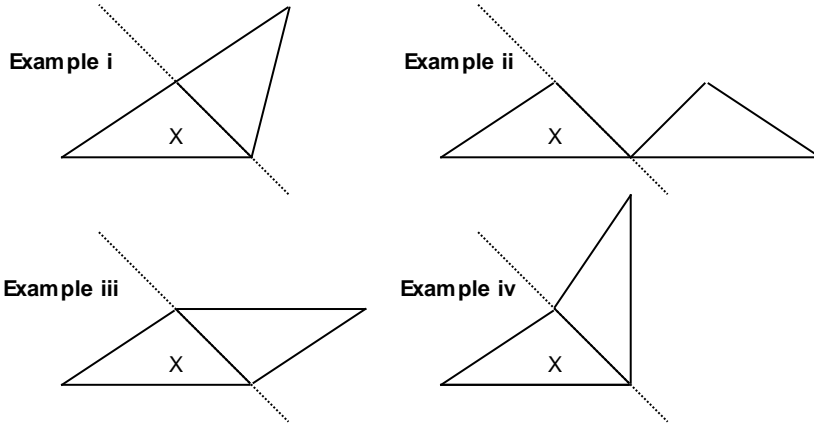
- a. 52.3 m      b. 21.6 m      c. 21.6 m      d. 12.6 m

\_\_\_ 14. How many lines of symmetry does this tessellation have?



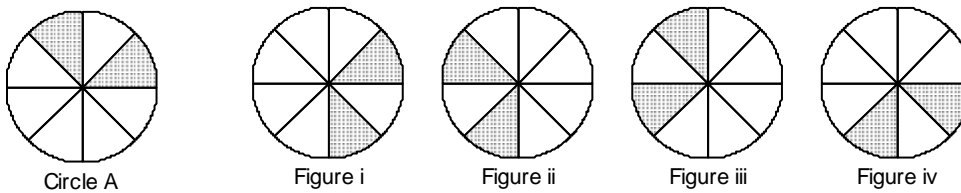
- a. 6      b. 2      c. 4      d. 1

\_\_\_ 15. Which example shows a reflection of triangle X in the dotted line?



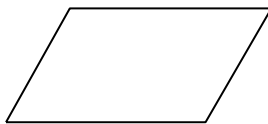
- a. Example iii
- b. Example i
- c. Example ii
- d. Example iv

\_\_\_ 16. Which figure shows the rotation image of circle A after a  $135^\circ$  counterclockwise rotation about its centre?



- a. Figure iv
- b. Figure i
- c. Figure iii
- d. Figure ii

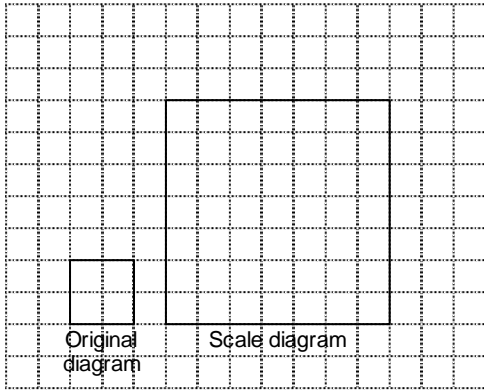
\_\_\_ 17. Describe the rotational symmetry and line symmetry of this parallelogram.



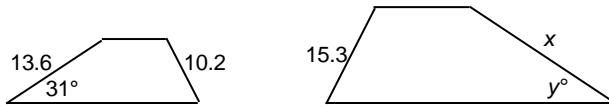
- a. Rotational symmetry of order 2 about the centre; no line symmetry
- b. Rotational symmetry of order 2 about the centre; 1 line of symmetry through the centre
- c. Rotational symmetry of order 1 about the centre; 1 line of symmetry through the centre
- d. No rotational symmetry; no line symmetry

**Short Answer**

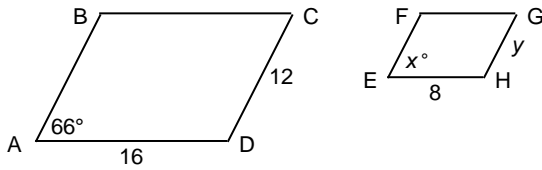
18. Determine the scale factor for this scale drawing.



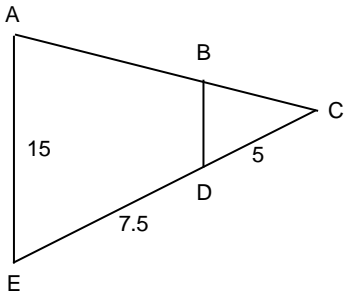
19. These quadrilaterals are similar. Determine the values of  $x$  and  $y^\circ$ .



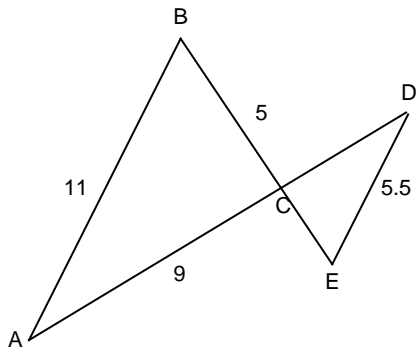
20. These parallelograms are similar. Determine the values of  $x^\circ$  and  $y$ .



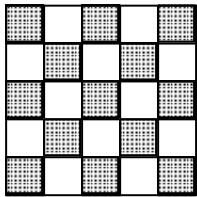
21. Determine the length of BD in these similar triangles.



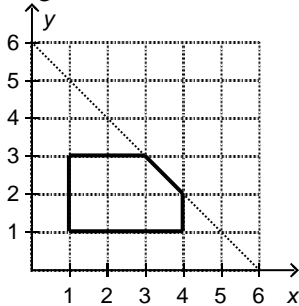
22. Determine the lengths of CD and CE in these similar triangles.



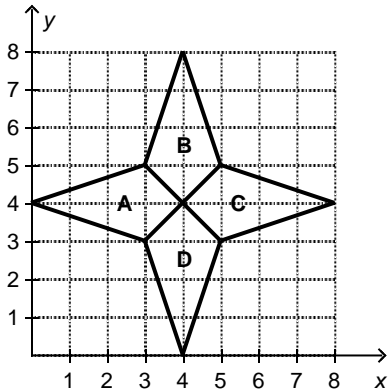
23. When the shadow of an electrical tower is 11.7 m long, a 4.5-m lamp post casts a shadow 6.5 m long. How tall is the electrical tower?
24. Draw the lines of symmetry in this tessellation.



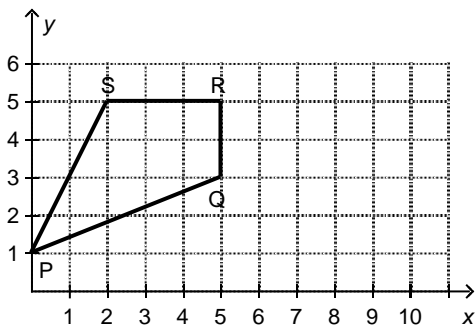
25. This polygon is one-half of a shape. Use the dotted line as a line of symmetry to complete the shape by drawing its other half.



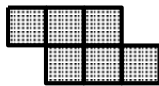
26. This design was created by reflecting quadrilateral A to create quadrilaterals B, C, and D. Describe the reflections.



27. This polygon is one-half of a shape. Use a vertical line through 5 on the  $x$ -axis as a line of symmetry to complete the shape by drawing its other half. Write the coordinates of the larger shape formed by PQRS and its image.

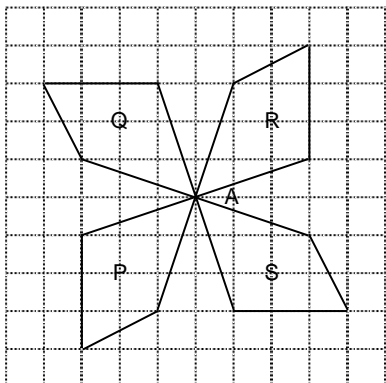


28. Describe the rotational symmetry and line symmetry of this diagram.



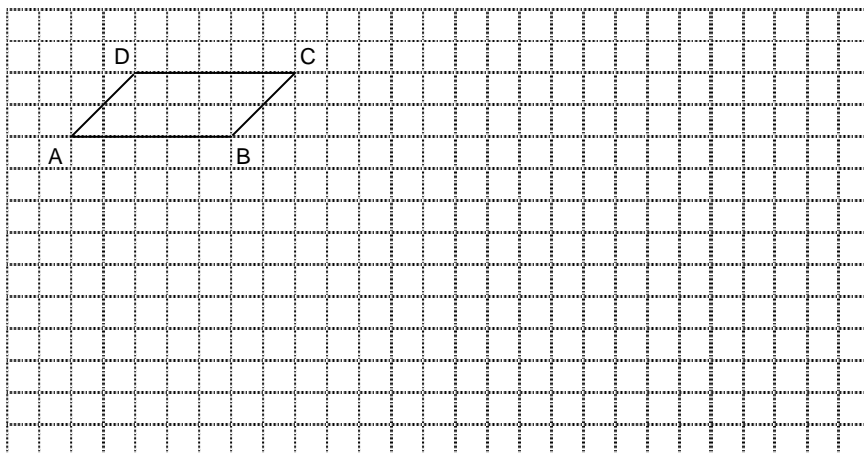


29. Quadrilateral P is rotated  $90^\circ$  clockwise about vertex A, then  $270^\circ$  counterclockwise about vertex A. Which quadrilateral shows the final position of quadrilateral P?



**Problem**

30. Draw a scale diagram of parallelogram ABCD with scale factor 3.



31. These three rectangles are similar.
- Determine the values of  $x$  and  $y$ .
  - Griswald draws another similar rectangle with width 57.6 cm. What is its length?

