

Symmetry and Similarity Review

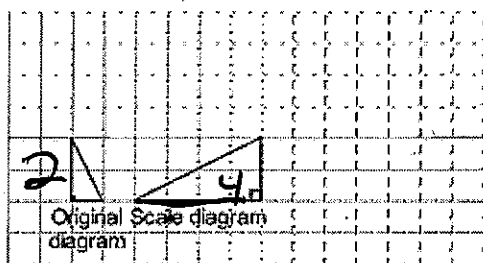
Name: Key

Date: _____

Total = /43

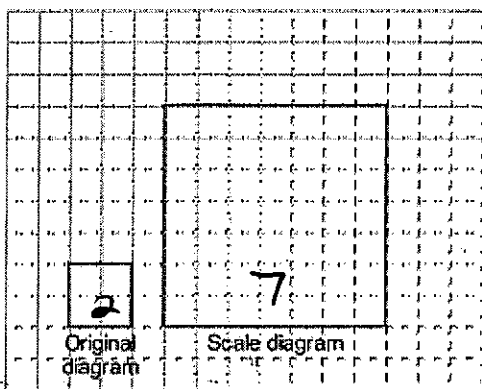
Short Answer

1. Determine the scale factor for this scale drawing.



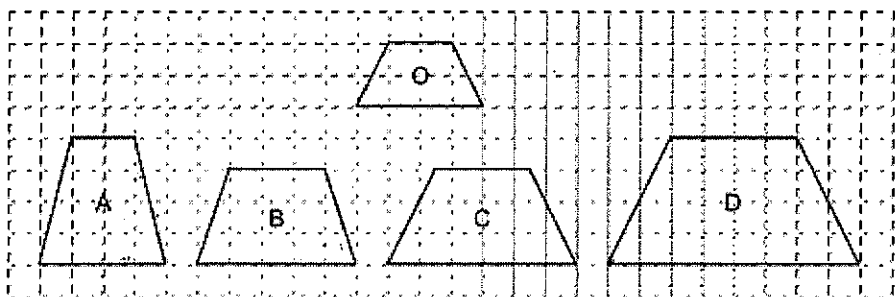
$$\frac{4}{2} = 2$$

2. Determine the scale factor for this scale drawing.



$$\frac{7}{2} = 3.5$$

3. Which of trapezoids A, B, C, and D are scale diagrams of trapezoid O?



C, D

4. A square has side length 4.3 cm.
The square is enlarged by a scale factor of 3.4.
Determine the side length of the enlargement.

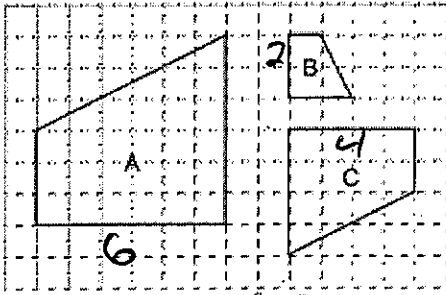
$$4.3 \times 3.4 = 14.62$$

5. A circle has diameter 48 cm. The diameter of the reduction is 42 cm.
Determine the scale factor of the reduction as a fraction and as a decimal.

/2

$$\frac{42}{48} = 0.875$$

6. Determine the scale factor for each reduction.
a) Quadrilateral B is a reduction of quadrilateral A.
b) Quadrilateral C is a reduction of quadrilateral A.
c) Quadrilateral B is a reduction of quadrilateral C.



$$\frac{2}{6} = 0.\bar{3}$$

$$\frac{4}{6} = 0.\bar{6}$$

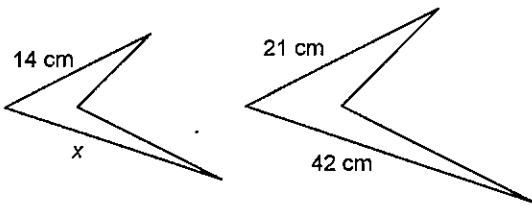
$$\frac{2}{4} = 0.5$$

/3

7. Determine the value of y in this proportion: $\frac{y}{2.7} = \frac{2.8}{16.8}$

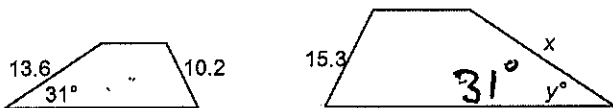
$$y = 0.45$$

8. These quadrilaterals are similar. Determine the value of x .



$$\frac{x}{14} = \frac{42}{21} = 28$$

9. These quadrilaterals are similar. Determine the values of x and y° .



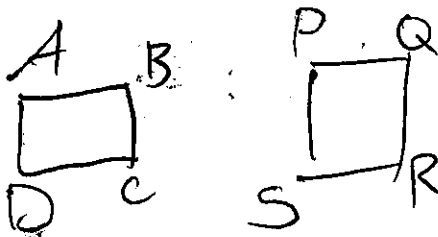
$$\frac{15.3}{10.2} = \frac{x}{13.6}$$

$$x = 20.4$$

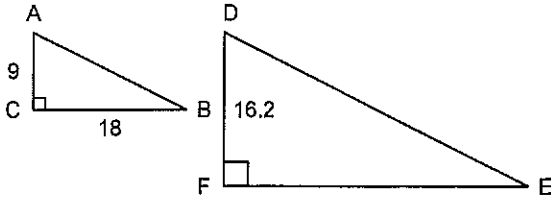
/2

10. Quadrilateral PQRS is similar to quadrilateral ABCD.
If $AB = 3$ cm, $BC = 4$ cm, and $QR = 8.96$ cm, determine the length of PQ .

$$\frac{4}{3} = \frac{8.96}{x} = 6.72$$

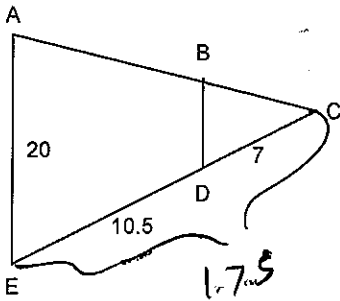


11. Determine the length of EF in these similar triangles.



$$\frac{EF}{16.2} = \frac{18}{9} = 32.4$$

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

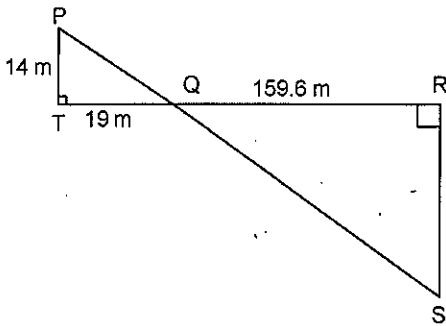


$$EC = 17.5$$

$$\frac{17.5}{20} = \frac{BD}{20}$$

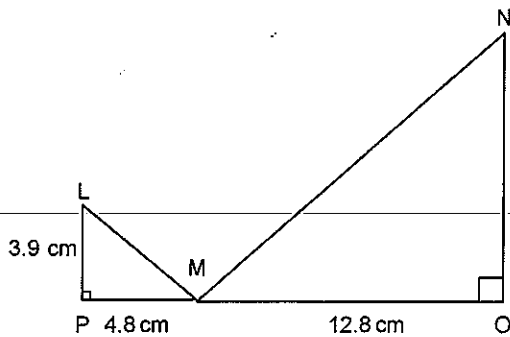
$$\frac{BD}{20} = \frac{7}{17.5} = 8$$

13. Determine the length of RS in these similar triangles.



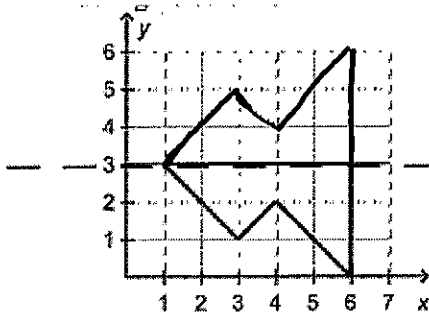
$$\frac{159.6}{14} = \frac{RS}{19} = 216.6$$

14. Determine the length of NO in these similar triangles.

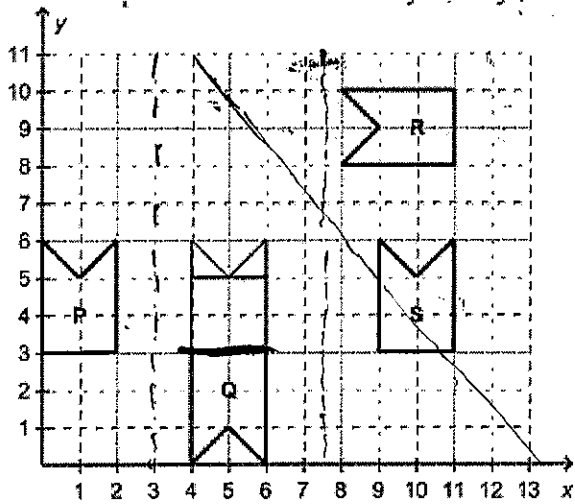


$$\frac{12.8}{4.8} = \frac{NO}{3.9} = 10.4$$

15. 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.



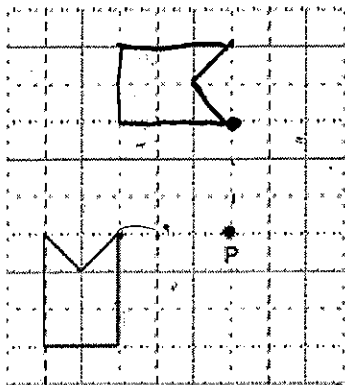
16. Identify the pentagons that are related to the black pentagon by a line of reflection. Describe the position of each line of symmetry.



All are related

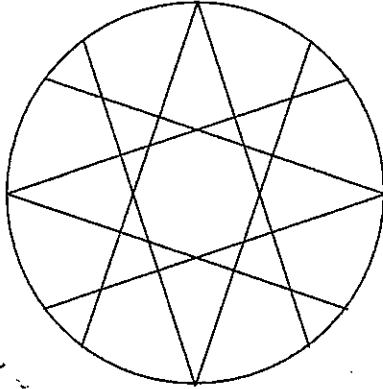
/4

17. Draw the rotation image after rotating the shape 90° clockwise about P.



18. What is the order of rotational symmetry and angle of rotation symmetry for this design

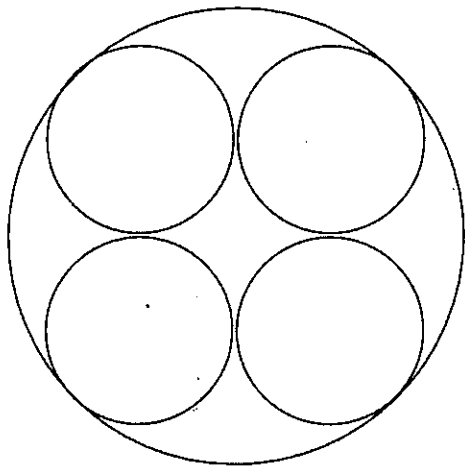
/2



4
90°

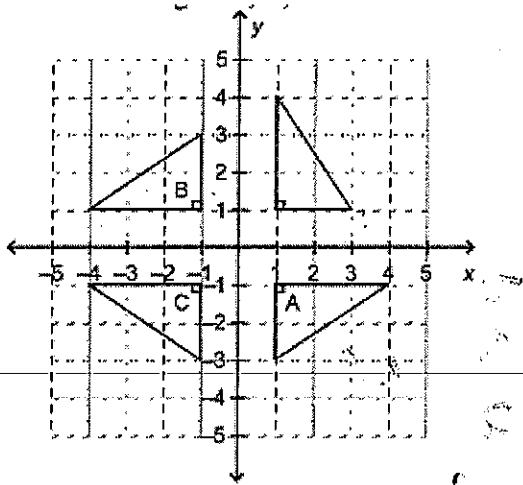
19. Describe the rotational symmetry and line symmetry of this design.

/2



4
90°

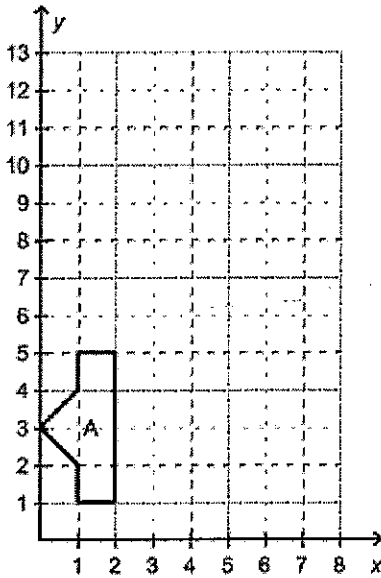
20. Which of triangles A, B, and C are related to the shaded triangle by rotational symmetry about the origin?



A, B

21. Determine whether polygon A and its image are related by line symmetry after each transformation:
- a translation R3
 - a translation U6
 - a reflection in a vertical line through 4 in the x-axis
 - a reflection in a horizontal line through 7 in the y-axis

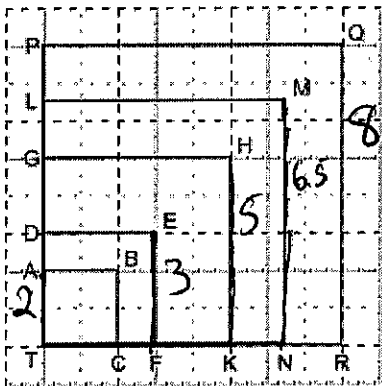
/4



- i) No
 ii) yes
 iii) no
 iii) yes

22. Determine each scale factor.
- Square TPQR is a scale drawing of square TABC.
 - Square TGHK is a scale drawing of square TDEF.
 - Square TPQR is a scale drawing of square TDEF.
 - Square TLMN is a scale drawing of square TABC.

/4



a) $\frac{8}{2} = 4$

b) $\frac{6.5}{3} = 2.1\bar{6}$

c) $\frac{8}{3} = 2.\bar{6}$

d) $\frac{6.5}{2} = 3.25$

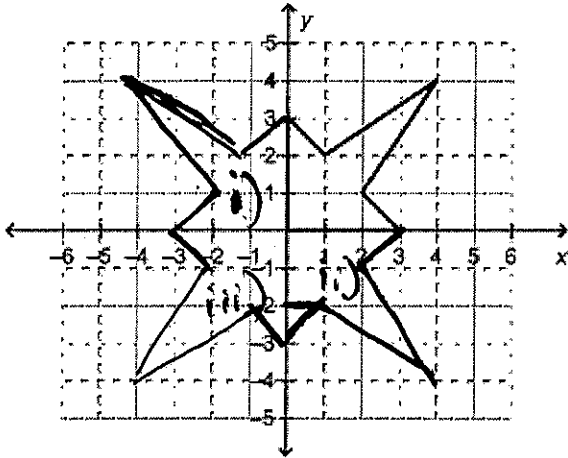
23. Calculate the values of the variables in this proportion: $\frac{x}{13.2} = \frac{8.5}{13.6} = \frac{6.9}{y}$

$$x = 8.25$$
$$y = 11.04$$

24. This polygon is part of a larger shape.
Draw the image of the polygon after each reflection:

- a reflection in the y -axis
- a reflection in the x -axis
- a reflection in the oblique line through $(-5, 5)$ and $(5, -5)$

How many lines of symmetry does the shape have?



4 lines of symmetry

