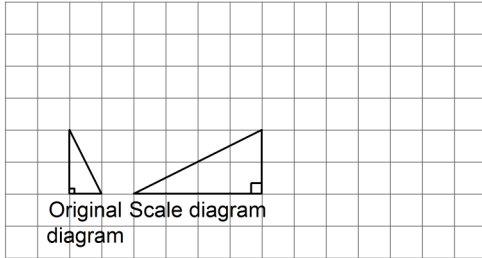
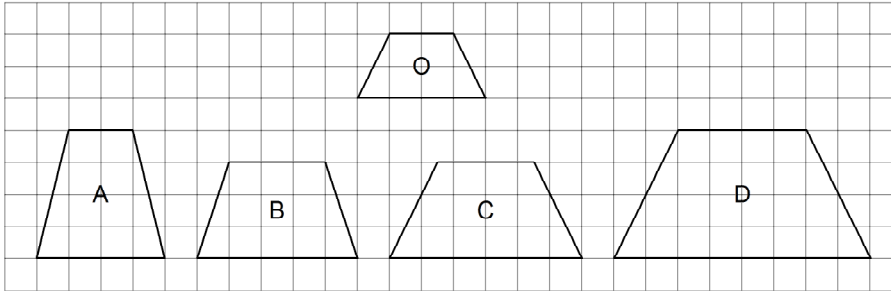


Math 9 - Final Review - Unit 7

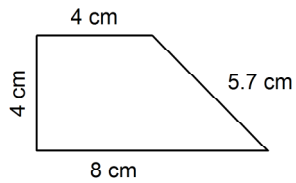
1. Determine the scale factor for this scale drawing.



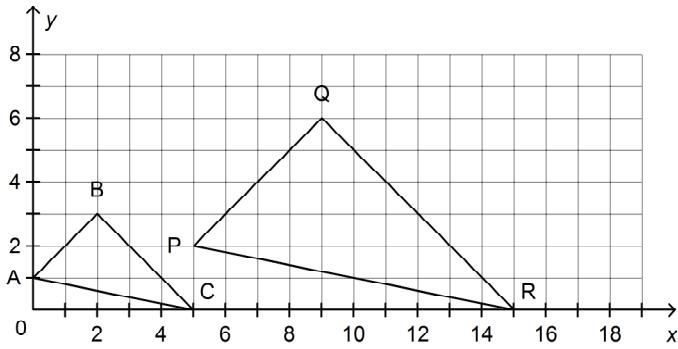
2. Which of trapezoids A, B, C, and D are scale diagrams of trapezoid O?



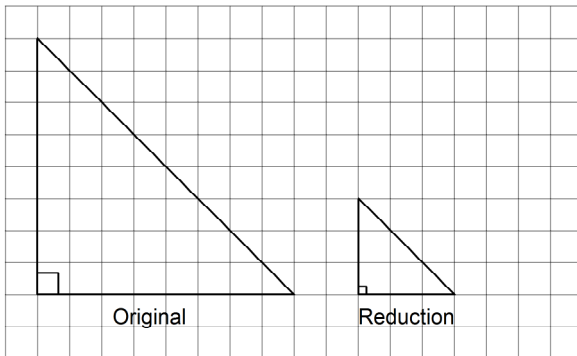
3. An enlargement of the shape below is made using a scale factor of 2. Determine the side lengths of the enlargement.



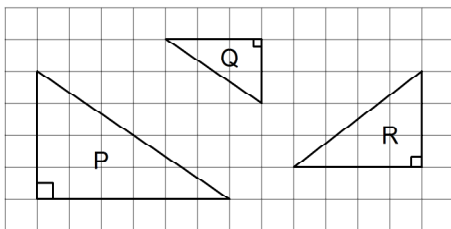
4. Is ΔPQR a scale diagram of ΔABC ? If yes, state the scale factor.



5. Determine the scale factor of this reduction as a fraction and as a decimal.

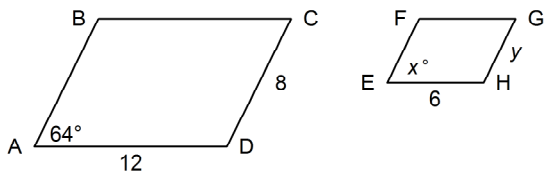


6. Which two triangles have pairs of corresponding lengths that are proportional? Identify the scale factor for the reduction.



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

8. These parallelograms are similar. Determine the values of x° and y .

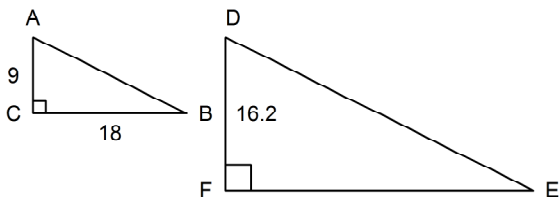


9. Triangle ABC is similar to ΔPQR .

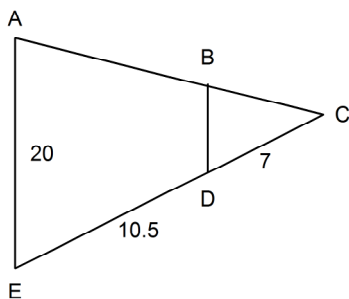
The ratios of the corresponding sides are: $\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$

State the corresponding angles.

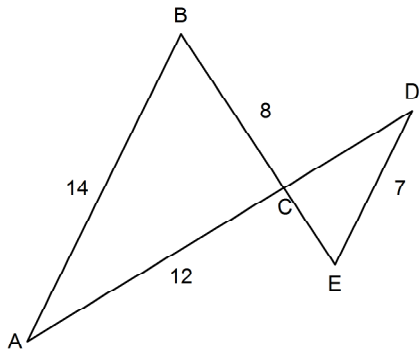
10. Determine the length of EF in these similar triangles.



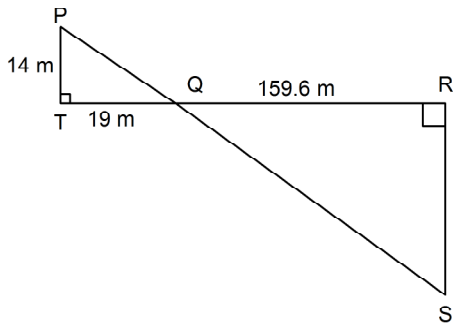
11. Determine the length of BD in these similar triangles.



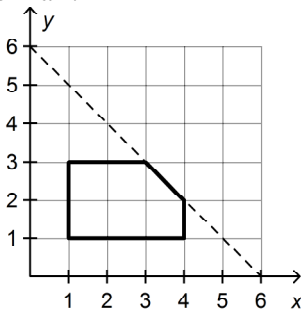
12. Determine the lengths of CD and CE in these similar triangles.



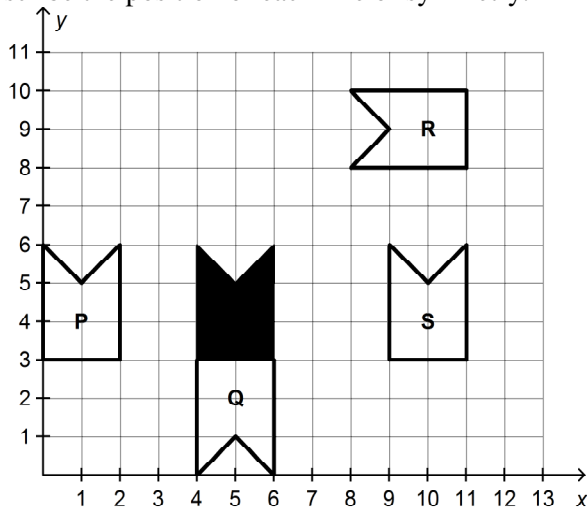
13. Determine the length of RS in these similar triangles.



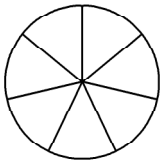
14. This polygon is one-half of a shape. Use the dotted line as a line of symmetry to complete the shape by drawing its other half.



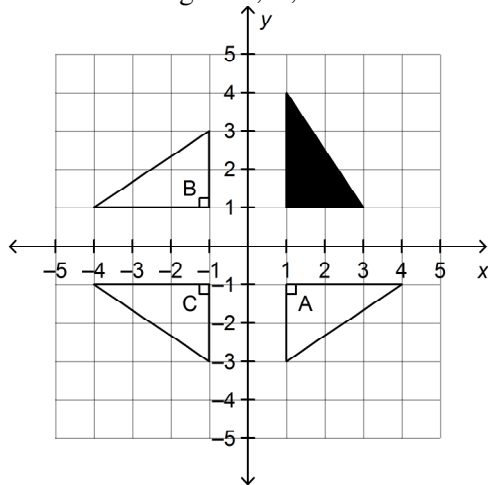
15. Identify the pentagons that are related to the black pentagon by a line of reflection. Describe the position of each line of symmetry.



16. What is the order of rotational symmetry for this design?



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

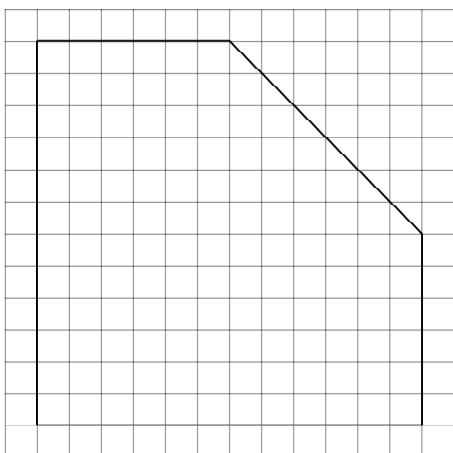


18. a) Complete the table.

Side length of original square	Area of original square	Scale factor	Side length of scale diagram	Area of scale diagram
6 cm		5		
7 cm		5		
8 cm		5		
9 cm		5		

b) What does the scale factor indicate about the scale diagram? Explain.

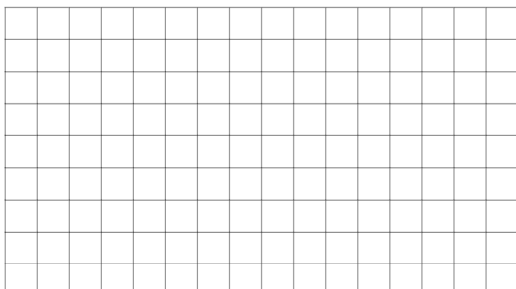
19. Two students were asked to make a reduction of this polygon.



Jessie used a scale factor of $\frac{1}{3}$ to create her diagram.

Kenny used a scale factor of $\frac{1}{4}$ to create his diagram.

a) Draw Jessie's and Kenny's scale diagrams.

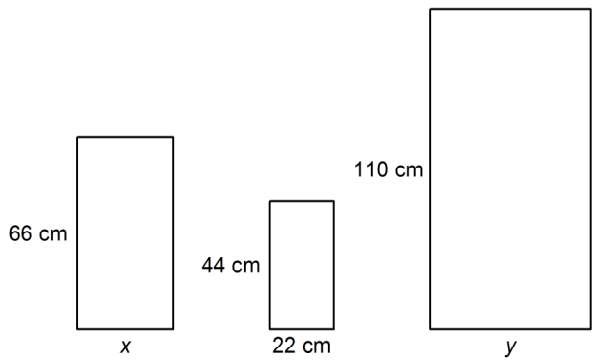


- b) If Kenny's diagram is a scale drawing of Jessie's diagram, determine the scale factor.
 c) If Jessie's diagram is a scale drawing of Kenny's diagram, determine the scale factor.

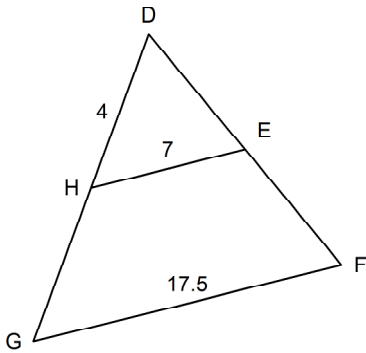
20. These three rectangles are similar.

a) Determine the values of x and y .

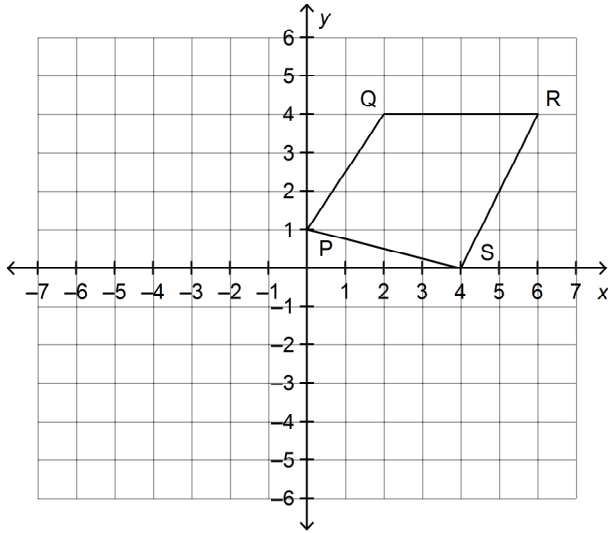
b) Griswald draws another similar rectangle with width 70.4 cm. What is its length?



21. Determine the length of HG.



22. Quadrilateral PQRS is rotated 180° about the origin, then 90° clockwise about the origin, then 180° about the origin, and finally 270° counterclockwise about the origin.
Draw and label the final rotation image of quadrilateral PQRS.

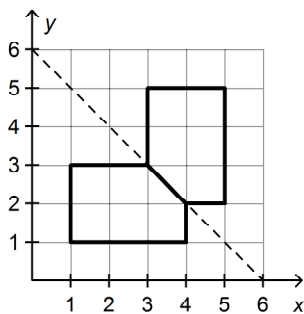


Math 9 - Final Review - Unit 7

Answer Section

SHORT ANSWER

1. The scale factor is 2.
2. Trapezoids C and D
3. 8 cm, 8 cm, 11.4 cm, and 16 cm
4. Yes, $\triangle PQR$ is a scale diagram of $\triangle ABC$.
The scale factor is 2.
5. $\frac{3}{8} = 0.375$
6. Triangle Q is a reduction of triangle P; the scale factor for the reduction is $\frac{1}{2}$.
7. 0.45
8. $y = 4$
 $x^\circ = 64^\circ$
9. $\angle A = \angle P$, $\angle B = \angle Q$, $\angle C = \angle R$
10. $EF = 32.4$
11. $BD = 8$
12. $CD = 6$
 $CE = 4$
13. $RS = 117.6$ m
- 14.



15. Pentagon P is the reflection image of the black pentagon in the vertical line through 3 on the x -axis.
Pentagon Q is the reflection image of the black pentagon in the horizontal line through 3 on the y -axis.
Pentagon R is the reflection image of the black pentagon in the oblique line through (4, 10) and (12, 2).
Pentagon S is the reflection image of the black pentagon in the vertical line through 7.5 on the x -axis.
16. 7
17. Triangles A and B

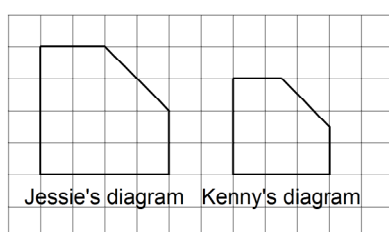
PROBLEM

18. a)

Side length of original square	Area of original square	Scale factor	Side length of scale diagram	Area of scale diagram
6 cm	36 cm ²	5	30 cm	900 cm ²
7 cm	49 cm ²	5	35 cm	1225 cm ²
8 cm	64 cm ²	5	40 cm	1600 cm ²
9 cm	81 cm ²	5	45 cm	2025 cm ²

b) The scale factor indicates that the scale diagram is 5 times the size of the original diagram.

19. a)

b) The scale factor is: $\frac{\text{Height on Kenny's diagram}}{\text{Height on Jessie's diagram}} = \frac{3}{4}$ c) The scale factor is: $\frac{\text{Height on Jessie's diagram}}{\text{Height on Kenny's diagram}} = \frac{4}{3}$

20. a)

Solve for x .

$$\frac{x}{22} = \frac{66}{44}$$

$$22 \times \frac{x}{22} = 22 \times \frac{66}{44}$$

$$x = \frac{22 \times 66}{44}$$

$$x = 33$$

So, $x = 33$ cm.Solve for y .

$$\frac{y}{22} = \frac{110}{44}$$

$$22 \times \frac{y}{22} = 22 \times \frac{110}{44}$$

$$y = \frac{22 \times 110}{44}$$

$$y = 55$$

So, $y = 55$ cm.b) Let z represent the length.

$$\frac{z}{44} = \frac{70.4}{22}$$

$$44 \times \frac{z}{44} = 44 \times \frac{70.4}{22}$$

$$z = \frac{44 \times 70.4}{22}$$

$$z = 140.8$$

The length is 140.8 cm.

21.

$$\frac{DG}{DH} = \frac{GF}{HE}$$

$$\frac{4+HG}{4} = \frac{17.5}{7}$$

$$4 \times \frac{4+HG}{4} = \frac{17.5}{7} \times 4$$

$$4+HG = \frac{17.5 \times 4}{7}$$

$$4+HG = 10$$

$$4+HG-4 = 10-4$$

$$HG = 6$$

The length of HG is 6 units.

22.

