Math 9 Similarity and Transformations
Chapter 7 PRACTICE Test

Name: _____

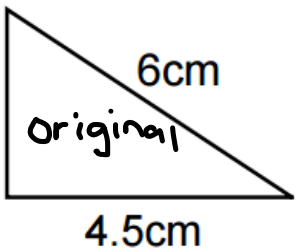
1. Which scale factor will give you the smallest reduction?

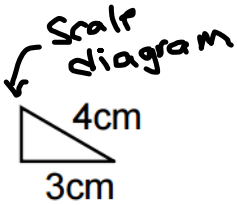
a. $\frac{1}{25}$
b. $\frac{1}{5}$
c. 5
d. 25

2. What is the scale factor for the reduction?

a. $\frac{1}{3}$
b. $\frac{2}{3}$
c. 1.5
d. 24

$S.F = \frac{S}{O} = \frac{4}{6} = \frac{2}{3}$





3. Calculate the value of *x* in the proportion $\frac{3}{16} = \frac{x}{32}$

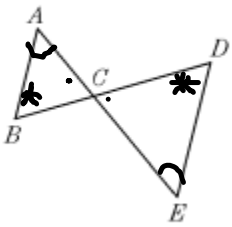
a. 0.17
b. 6
c. 9
d. 96

$\frac{16x}{16} = \frac{96}{16}$

$x = 6$

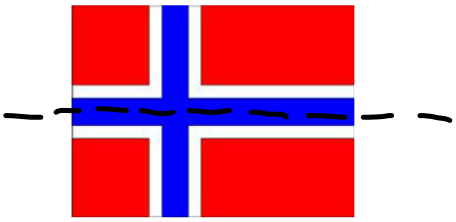
4. The two triangles are similar. Which statement is true?

a. $\Delta ABC \sim \Delta CDE$
b. $\Delta ABC \sim \Delta DEC$
c. $\Delta ABC \sim \Delta ECD$
d. $\Delta ABC \sim \Delta EDC$

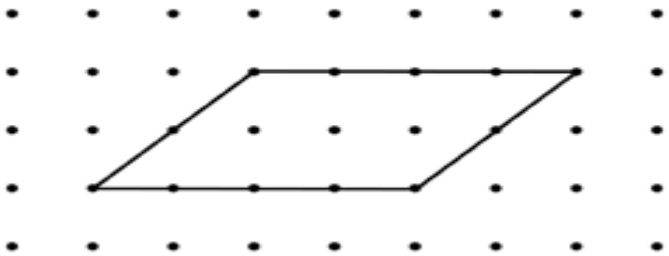


5. How many lines of symmetry are present in the Norwegian flag?

a. 0
b. 1
c. 2
d. 4

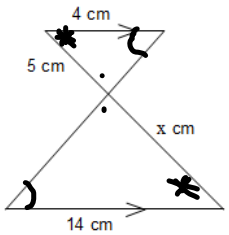


6. What is the order of rotation for the figure?



a. none
b. 1
c. 2
d. 4

7. Calculate the length of *x*.



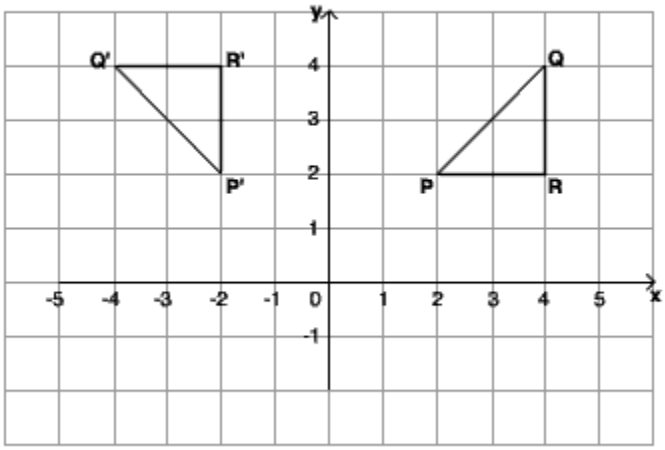
a. 1.4
b. 10
c. 11.2
d. 17.5

$\frac{x}{5} = \frac{14}{4}$

$\frac{4x}{4} = \frac{70}{4}$

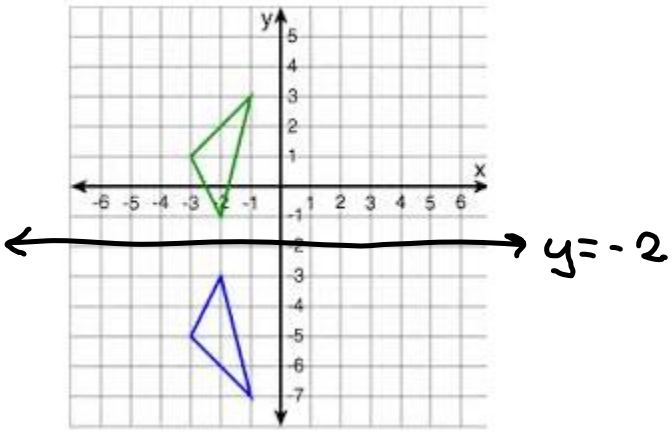
$x = 17.5$

8. Which transformation is type of transformation has occurred?



a. Reflection
b. Rotation
c. Translation
d. None of the above

9. Over which line has the reflection occurred?



a) $x - axis$
b) $x = -2$
c) $y - axis$
d) $y = -2$

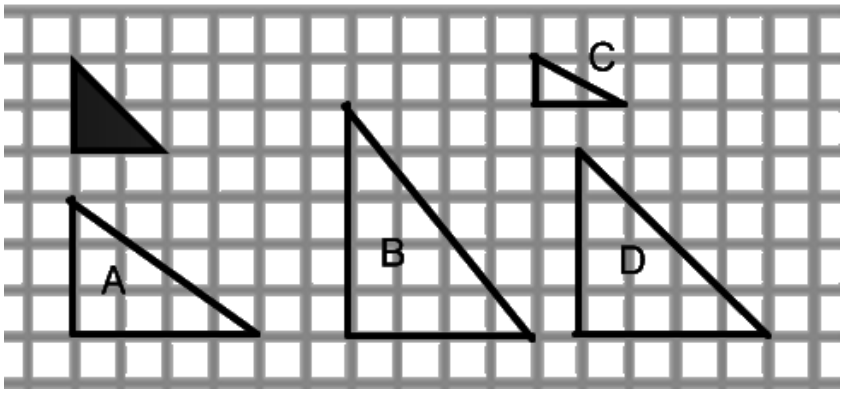
10. Which of the shapes on the grid is similar to the shaded figure?

A) A

B) B

C) C

D) D



Part B:Constructed response

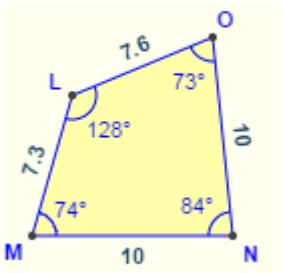
1. Are these two polygons similar? Explain how you know. (3 marks)

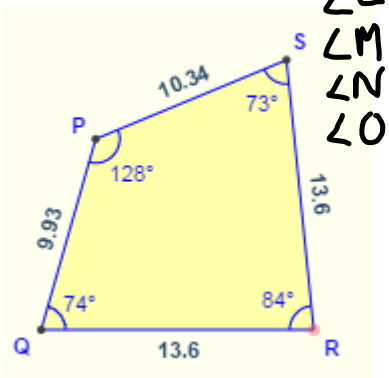
$\angle L = \angle P$
$\angle M = \angle Q$
$\angle N = \angle R$
$\angle O = \angle S$

$$\frac{LM}{PQ} = \frac{MN}{QR} = \frac{NO}{RS} = \frac{OL}{SP}$$

$$\frac{7.3}{9.93} = \frac{10}{13.6} = \frac{10}{13.6} = \frac{7.6}{10.34}$$

$$0.74 = 0.74 = 0.74 = 0.74$$



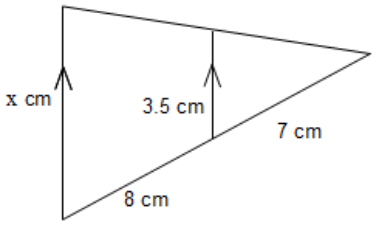


The two polygons are similar since, ① all side lengths are proportional AND ② all angles are equal.

$\therefore LMNO \sim PQRS$

2. Calculate the length of *x*. (2 marks)

$8 + 7 = 15$



$$\frac{x}{3.5} = \frac{15}{7}$$

$$\frac{7x}{7} = \frac{52.5}{7} \qquad \boxed{x = 7.5}$$

3. For the diagram (3 marks)

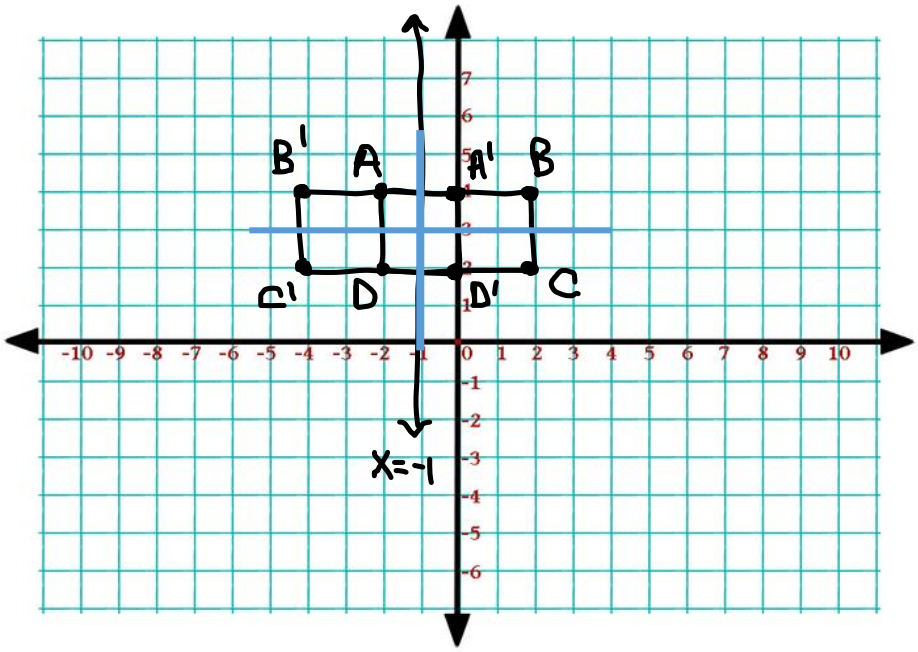
a) How many lines of symmetry are there? 3

b) What is the order of rotation? 3

c) What is the angle of rotation symmetry? $\frac{360}{3} = 120°$

4. a) Draw the object shape that has vertices : A(−2, 4), B(2, 4), C(2, 2), D(−2, 2) (2 marks)

b) Reflect ABCD over the line $x = -1$ (2 marks)



c) Does the combined shape (when you put the two together) have rotational or line symmetry? Explain how you know (2 marks)

2 Lines of Symmetry

Rotational Symmetry of order 2 about the point (-1,3).