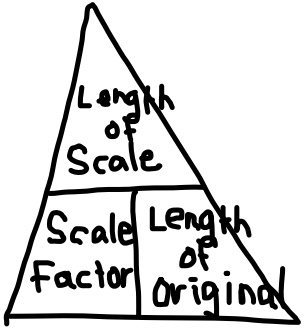


Chapter 7 Math PRACTICE Assignment
Similarity and Transformations

Name:_____

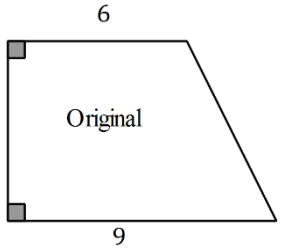
1.		2.		3.		4.		5.	
6.		7.		8.		9.		10.	

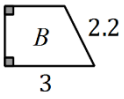
Part A: Multiple Choice Responses (10 marks)

1. What is the scale factor?

$S.F = \frac{S}{O} = \frac{3}{9} = \frac{1}{3}$

(a) $\frac{1}{3}$
(b) $\frac{1}{2}$
(c) 3
(d) 6





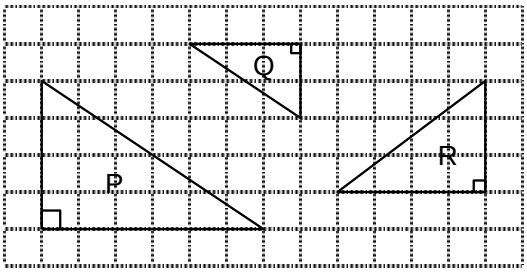
2. The height of a person is changed by a scale factor of $\frac{1}{15}$ to create a 12 cm tall action figure. How tall is the actual person?

(a) 0.8 cm
(b) 80 cm
(c) 180 cm
(d) 210 cm

Original = Scale length ÷ Scale factor
$= 12 \div \frac{1}{15}$
$= 180$

3. Which statement is true?

(a) Q is a reduction of R.
(b) P is an enlargement of R.
(c) Q is a reduction of P.
(d) R is an enlargement of P.



$\frac{Q}{R} = \frac{3}{4} \neq \frac{2}{3}$

$\frac{P}{R} = \frac{6}{4} \neq \frac{4}{3}$

4. Calculate the value of x in the proportion $\frac{3}{x} = \frac{5}{4}$.

(a) 1.6
(b) 2.4
(c) 2.8
(d) 3.75

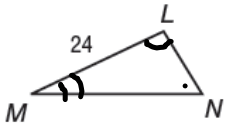
$\frac{5x}{5} = \frac{12}{5}$

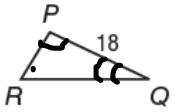
$x = 2.4$

$\frac{Q}{P} = \frac{3}{6} = \frac{2}{4}$ ✓
$\frac{1}{2}$ $\frac{1}{2}$

5. The 2 triangles below are similar. Which statement is correct?

(a) $\Delta LMN \sim \Delta PRQ$
(b) $\Delta LMN \sim \Delta PQR$
(c) $\Delta LMN \sim \Delta RQP$
(d) $\Delta LMN \sim \Delta RPQ$

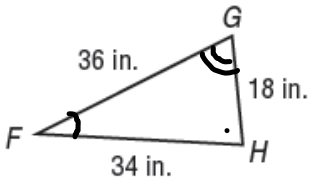


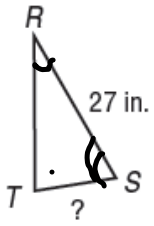


$\angle L = \angle P$
$\angle M = \angle Q$
$\angle N = \angle R$

6. Triangle FGH is similar to triangle RST. Which proportion could be used to solve for side TS?

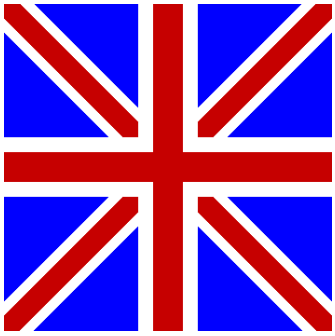
(a) $\frac{36}{27} = \frac{x}{18}$
(b) $\frac{36}{27} = \frac{18}{x}$
(c) $\frac{34}{27} = \frac{x}{18}$
(d) $\frac{34}{27} = \frac{18}{x}$





7. What is order of rotation and angle of rotation for the figure below?

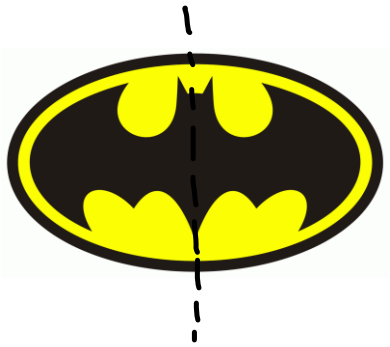
	Order of Rotation	Angle of Rotation
(a)	4	60°
(b)	4	90°
(c)	8	45°
(d)	8	90°



$\frac{360}{4} = 90^\circ$

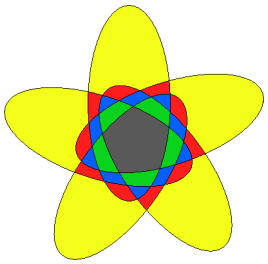
8. How many lines of symmetry does the following shape have?

(a) 1
(b) 2
(c) 4
(d) 8



9. What is the angle of rotation symmetry for this shape?

(a) 36°
(b) 45°
(c) 60°
(d) 72°

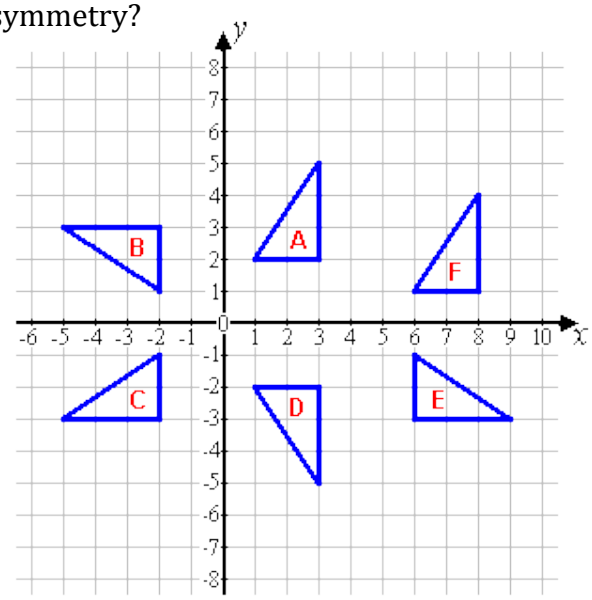


order of rotation is 5.

Angle of rotation = $\frac{360}{5} = 72°$

10. Which 2 triangles have line symmetry?

(a) A and B
(b) E and F
(c) C and D
(d) A and D

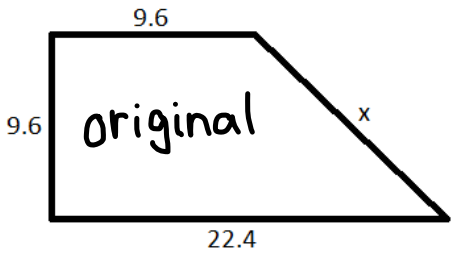


Part B: Constructed Response. Answer the following in the spaces provided.

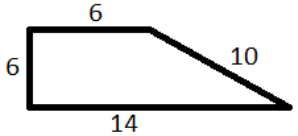
1. The 2 polygons shown are similar.

A. What is the scale factor (assume the top picture is the original)? (2 marks)

$S.F = \frac{\text{Scale}}{\text{original}} = \frac{14}{22.4} = 0.625$



B. What is the length of side x? (2 marks)



Method 1: $\frac{x}{10} = \frac{22.4}{14}$

$\frac{14x}{14} = \frac{224}{14}$

$x = 16$

Method 2:

Scale length ÷ S.F.

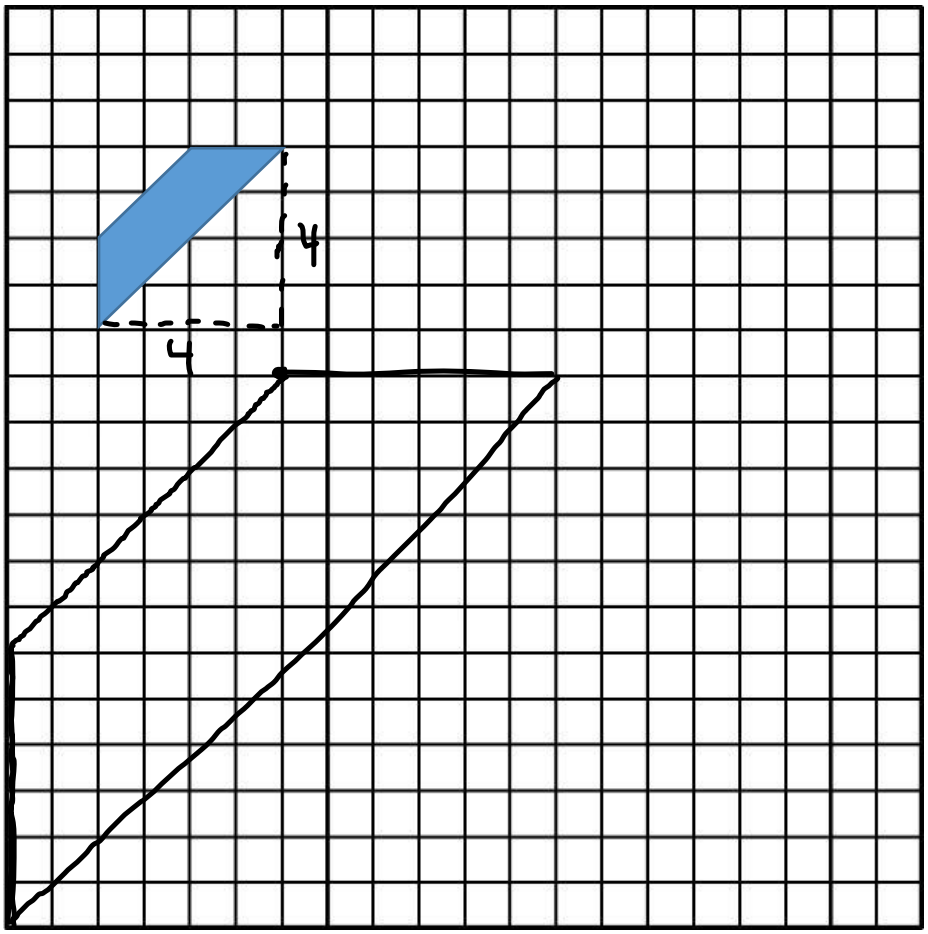
$10 \div 0.625$

$= 16$

2. Use a scale factor of 3 to draw an enlargement of the shape below. (3 marks)

$2 \times 3 = 6$

$4 \times 3 = 12$



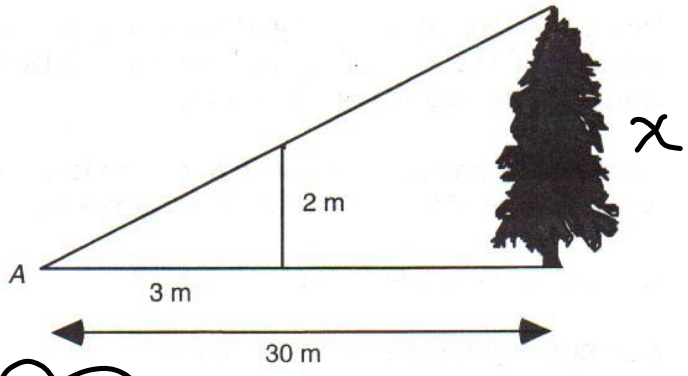
Use a ruler!

3. A 2 m high person has a shadow that is 3 m long. If the tree's shadow is 30 m, how tall is the tree? (2 marks)

$\frac{x}{2} = \frac{30}{3}$

$\frac{3x}{3} = \frac{60}{3}$

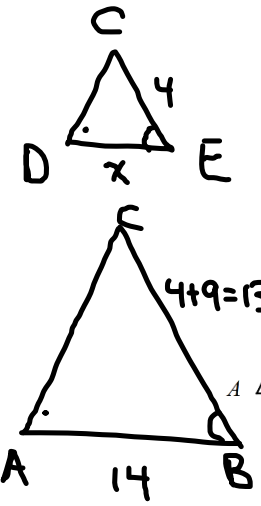
$x = 20$



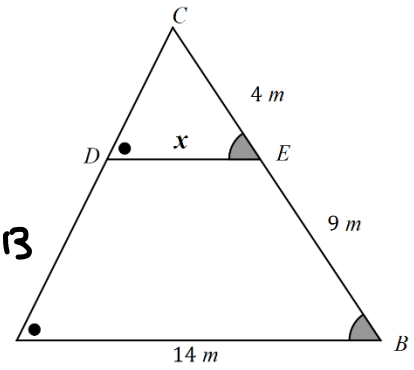
The tree is 20m.

4. A. For the 2 triangles below, state which 2 triangles are similar. (1 mark)

$\Delta ABC \sim \Delta DEC$



B. Explain why the 2 triangles are similar. (2 marks)



The 2 triangles are similar since,

$\angle A = \angle D$

$\angle B = \angle E$

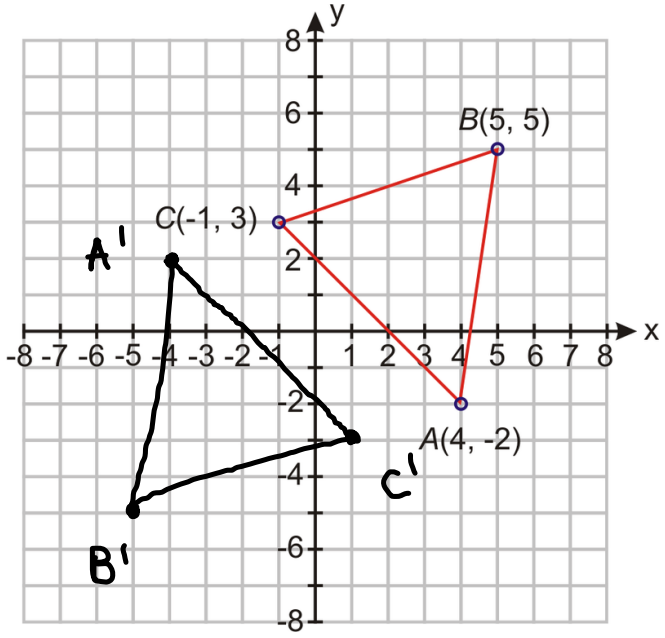
$\angle C = \angle C$

C. Find the value of the missing side x. (2 marks)

$\frac{x}{14} = \frac{4}{13}$

$\frac{13x}{13} = \frac{56}{13}$ $x = 4.31m$

5. Rotate the triangle below 180 degrees about the origin. Does the new combined shape have line symmetry, rotation symmetry, or both? Explain. (4 marks)

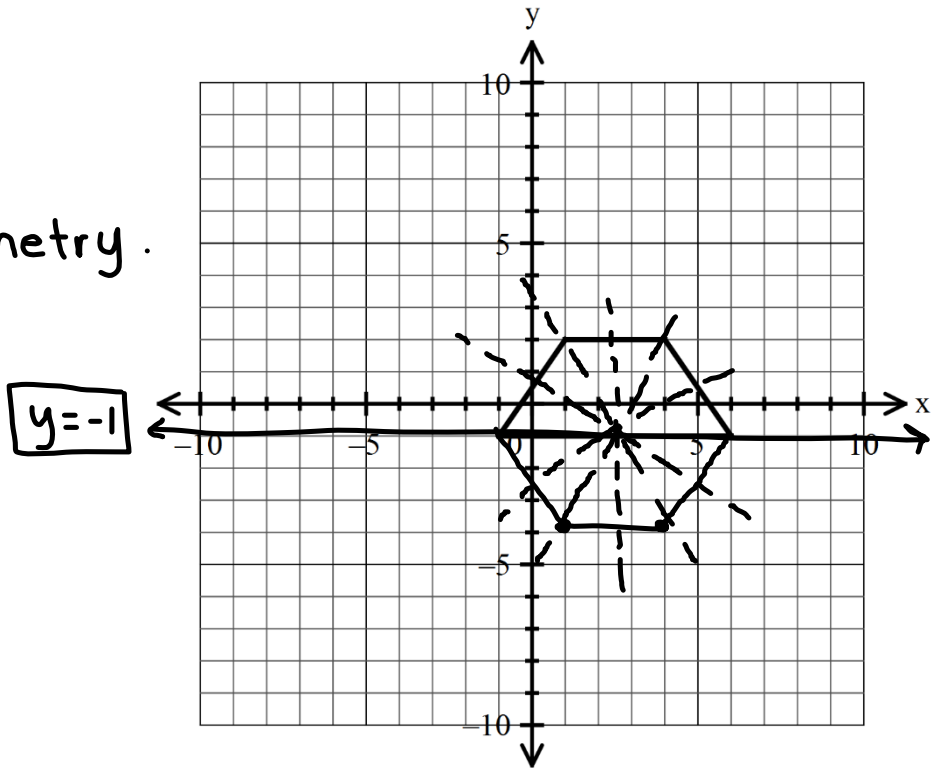


No Line Symmetry.

Rotational Symmetry of order 2 about the origin.

6. A. For the polygon below, reflect it in the line $y = -1$. (2 marks)

B. Draw all the lines of symmetry for the new combined shape. (2 marks)



6 Lines of Symmetry.

C. What is the order of rotation for the combined shape? (1 mark)

order of rotation is 6.

D. What is the angle of rotation symmetry? (1 mark)

Angle of Rotation Symmetry $= \frac{360}{6} = 60°$