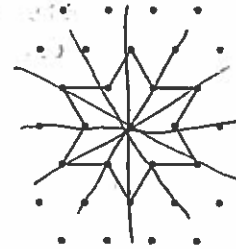


Grade 9 Math
Unit 7: Similarity and Transformations

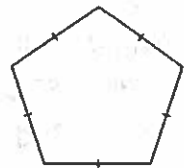
June Exam Review

1. How many lines of symmetry does this diagram have?

- A. 1 B. 2
C. 5 **D. 6**



2. What is the order of rotational symmetry of this diagram?



- A. 0 B. 1
C. 5 D. 6

3. What is the angle of rotation symmetry for this diagram?

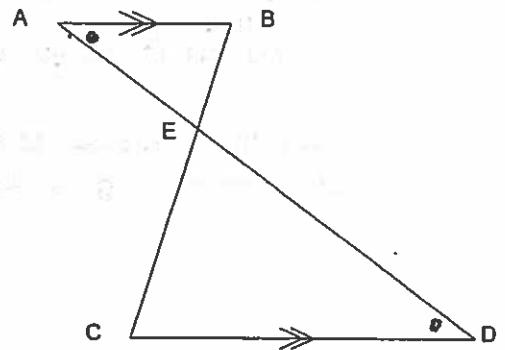
- A. 45° **B. 90°**
C. 120° D. 180°



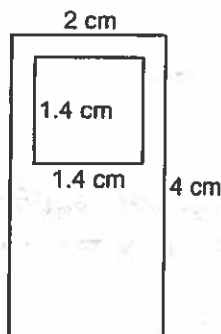
$$\frac{360}{4} = 90^\circ$$

4. If $\triangle ABE \sim \triangle DCE$, which is true?

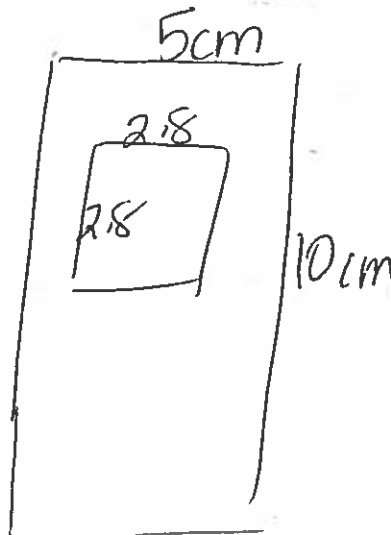
- (A) $\frac{AB}{DE} = \frac{AE}{DC}$ X (B) $\frac{DC}{AB} = \frac{AE}{DE}$ X
(C) $\frac{AE}{DC} = \frac{AB}{DE}$ X **(D) $\frac{AB}{DC} = \frac{BE}{CE}$** ✓



5. What are the new dimensions of this MP3 player if you use a scale factor of 2.5?



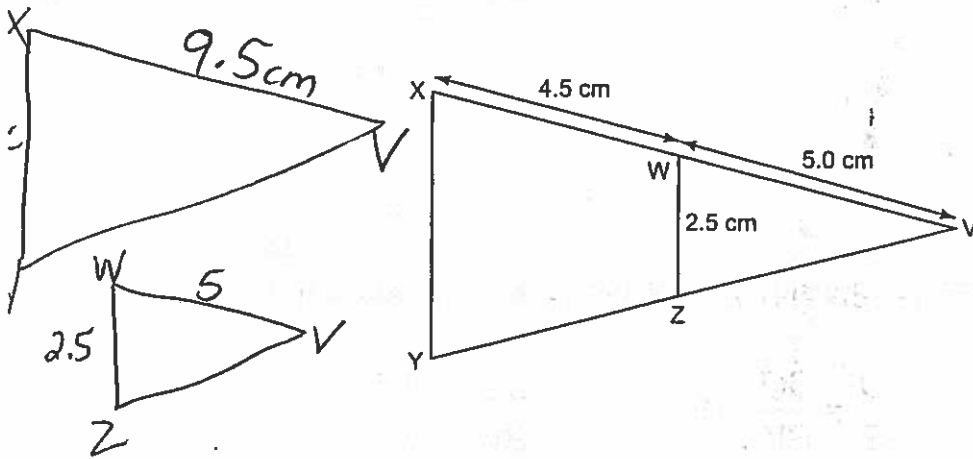
enlarged x 2.5



$$\begin{aligned} 2 \times 2.5 &= 5 \\ 1.4 \times 2 &= 2.8 \\ 4 \times 2.5 &= 10 \end{aligned}$$

6a). Why is $\triangle XYV \sim \triangle WZV$?

b). Using the idea of similar triangles, find the length of XY in the diagram.



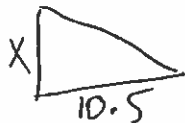
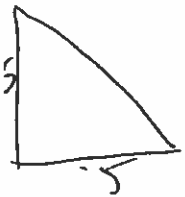
$$\frac{x}{2.5} = \frac{9.5}{5}$$

$$\frac{5x}{5} = \frac{23.75}{5}$$

$$x = 4.75 \text{ cm}$$

7. Naomi wants to calculate the height of a tree. She is 1.5 m tall and casts a shadow of 2.5 m. At the same time, the shadow of the tree is 10.5 m long.

- Sketch a diagram that can be used to calculate the height of the tree.
- What is the height of the tree?



$$\frac{x}{1.5} = \frac{10.5}{2.5}$$

$$\frac{2.5x}{2.5} = \frac{15.75}{2.5}$$

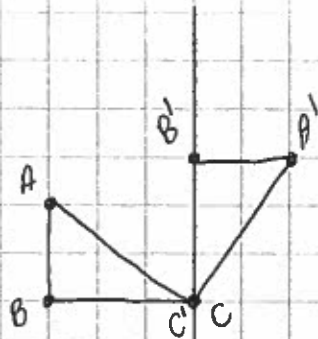
$$x = 6.3 \text{ m}$$

8. Plot these points on a grid: A(-3, 4), B(-3, 2), C(0, 2). For each transformation below:

- Draw the transformation image.
- Record the coordinates of its vertices.
- Describe the symmetry of the diagram formed by the original shape and its image.

- rotation 90° clockwise about point C(0, 2)
- reflection in the horizontal line passing through (0, 2)
- a translation $4R, 2U$

8 a.)

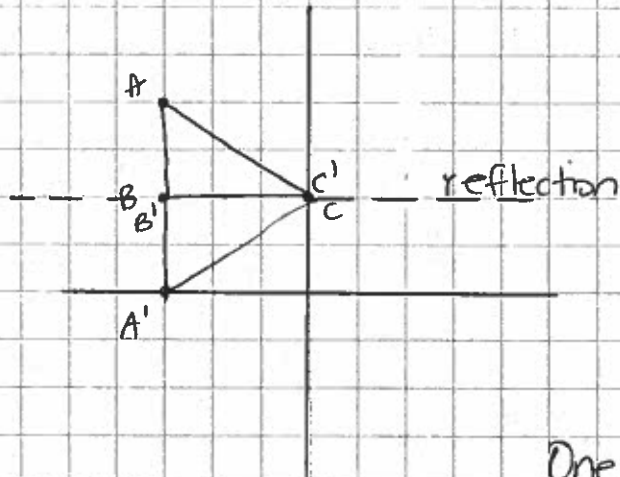


Original	Image
$A(-3, 4)$	$A'(2, 5)$
$B(-3, 2)$	$B'(0, 5)$
$C(0, 2)$	$C'(0, 2)$

90° clockwise turn

no line or rotational symmetry.

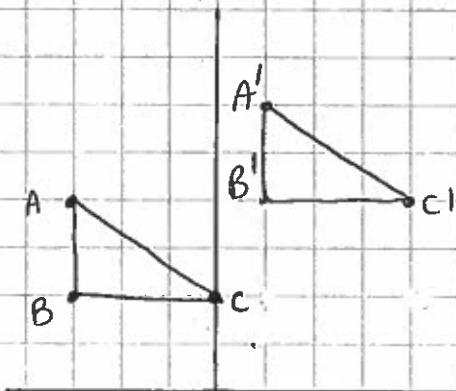
b.)



Original	Image
$A(-3, 4)$	$A'(-3, 0)$
$B(-3, 2)$	$B'(-3, 2)$
$C(0, 2)$	$C'(0, 2)$

One line of reflectional symmetry
No rotational symmetry.

c.)



Original	Image
$A(-3, 4)$	$A'(1, 6)$
$B(-3, 2)$	$B'(1, 4)$
$C(0, 2)$	$C'(4, 4)$

No line symmetry
No rotational symmetry.

Translation 4 right
2 up