

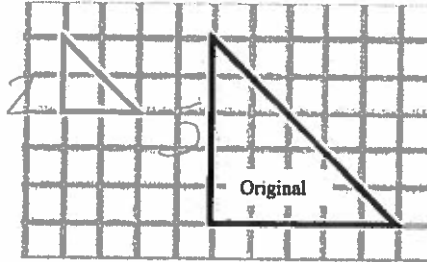
## Part 1: Multiple Choice. 7 marks

Write the correct answer in the space provided at the right.

Please show workings in the white space for those questions that require workings.

$$\frac{\quad}{30} = \frac{\quad}{\quad} \%$$

1. What is the scale factor for the reduction shown below?

1. C

(A)  $\frac{1}{2}$

(B) 2

(C)  $\frac{2}{5}$

(D)  $\frac{5}{2}$

$$k = \frac{2}{5} = \frac{2}{5}$$

2. A snail has a shell that is 2.5 cm across. It is enlarged by a factor of 6. How long will the scale drawing be?

2. D

(A) 0.42 cm

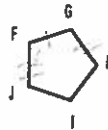
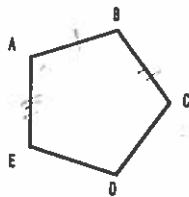
(B) 2.5 cm

(C) 6 cm

(D) 15 cm

$$2.5 \times 6$$

3. The two pentagons below are similar. Which of the following is FALSE?

3. D

(A)  $\angle A = \angle F$  ✓

(B)  $\frac{AB}{FG} = \frac{BC}{GH}$  ✓

(C)  $\frac{AB}{FG} = \frac{AE}{FJ}$  ✓

(D)  $\frac{AB}{FG} = \frac{HI}{CD}$

4. What order of rotational symmetry does the regular pentagon below have?

4. C

(A) 3

(B) 4

(C) 5

(D) 6



5. What is the angle of rotation symmetry for an object that has an order of rotational symmetry of 3?

5. B

(A)  $180^\circ$

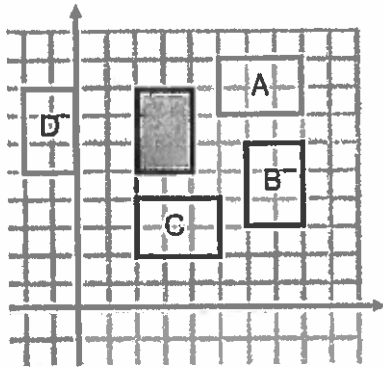
(B)  $120^\circ$

(C)  $90^\circ$

(D)  $72^\circ$

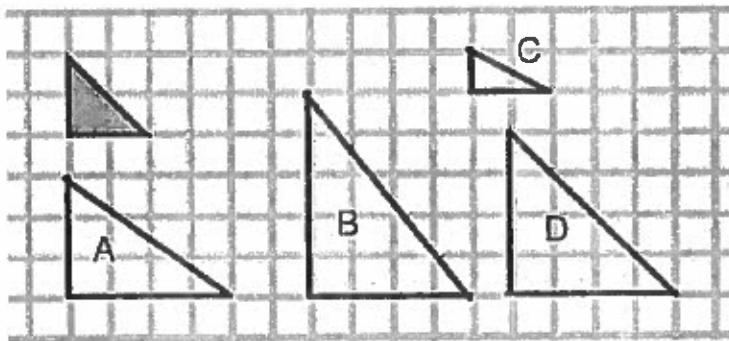
6. Which of the shapes on the grid below is related to the shaded figure by a REFLECTION?

6. D



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

7. D



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

8. A

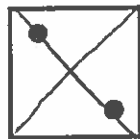


- (A) 0
- (B) 1
- (C) 2
- (D) 4

Part 2: Answer each of the following in the space provided.  
Be sure to show all workings to receive full credit!

(22 Marks)

9. (a) On the die face given below, draw all possible lines of symmetry (2 marks)



(b) What order of rotational symmetry does this face have? What is its angle of rotation symmetry? (2 marks)

↳ 2

↳ 180°  

$$\frac{360^\circ}{2} = 180^\circ$$

10. A map of the school has a scale of 1:1000. Mr. Woodland's classroom is 65 m from the Chemistry lab. How far apart are they on the map? Please give your answer in cm. (3 marks)

65 m = 6500 cm

$K = \frac{\text{image}}{\text{original}}$

$\frac{1}{1000} = \frac{x}{6500}$

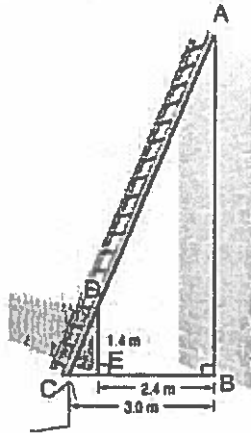
$\frac{1000x}{1000} = \frac{6500}{1000}$

$x = 6.5 \text{ cm}$

11. A ladder is resting on a wall according to the diagram below:  
 a. State the triangles that are similar, and write the equal ratios for the corresponding sides. (3 marks)

$\triangle ABC \sim \triangle DEC$

$\frac{AB}{DE} = \frac{BC}{EC} = \frac{AC}{DC}$

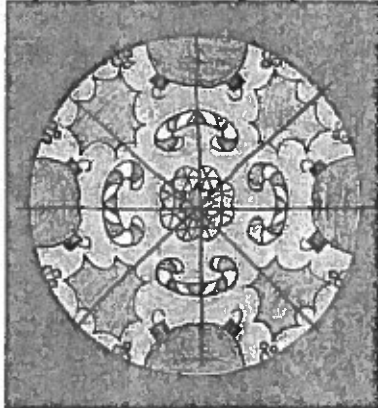


$3 - 2.4 = 0.6 \text{ m}$

b. Calculate how far up the wall the ladder reaches to the nearest tenth of a meter. (3 marks)

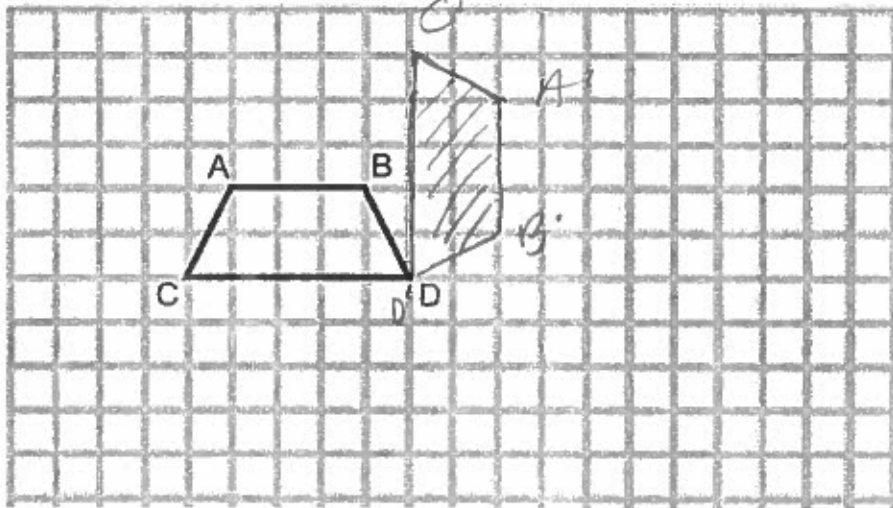
$\frac{x}{1.4} = \frac{3}{0.6}$        $\frac{0.6x}{0.6} = \frac{4.2}{0.6}$   
 $x = 7 \text{ m}$

12. Examine the piece of artwork given below. Identify the types of symmetry shown in the artwork. Explain your choice using the picture. (2 marks)

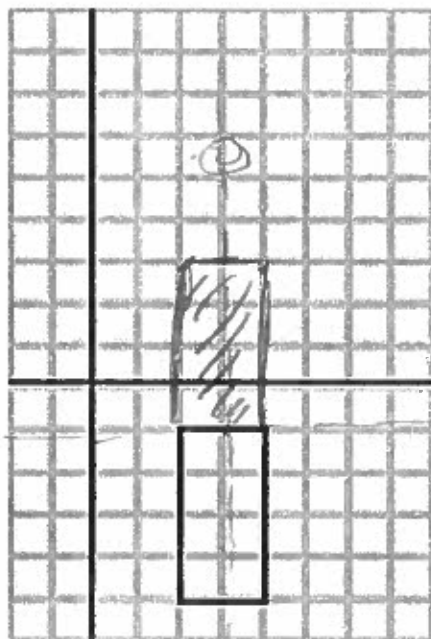


↓  
 4 line symmetry (4)  
 rotational symmetry  
 order 4  
 angle 90°

12. Rotate the following shape  $90^\circ$  clockwise around D (3 marks)



13. Translate the following rectangle 4 units up. Does the diagram have line or rotational symmetry? If so, describe the symmetry (4 marks)



↓  
line symmetry (2)

rotational (3,0)

order 2

angle  $180^\circ$

①