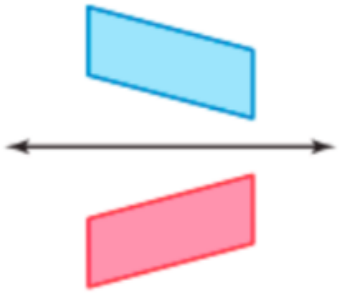
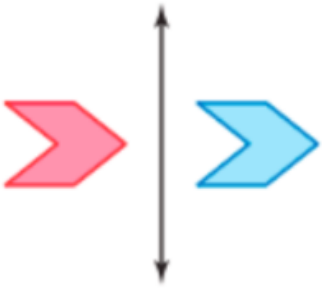
Q1. **State** in which the blue figure is a reflection of the red figure

[Criterion A - Level 1-2: Simple problem in familiar situations]

a.



b.



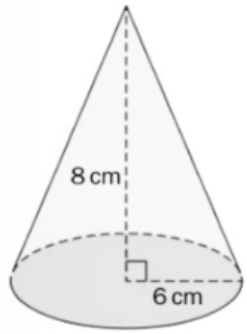
Q2. **Write down** the mean of 4,5, 7,10,8, 2

[Criterion A - Level 1-2: Simple problem in familiar situations]

Q3. **Write down** the number of diagonals in the octagon.

[Criterion A - Level 1-2: Simple problem in familiar situations]

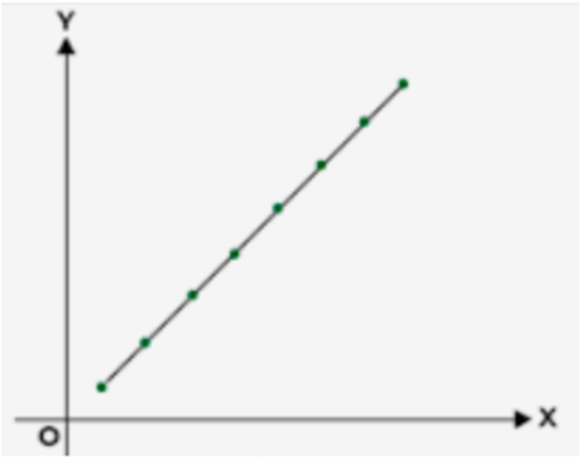
Q4. **Determine** the volume of the cone



[Criterion A - Level 1-2: Simple problem in familiar situations]

Q5. **Identify** which type of correlation. **State** the reason for it.

[Criterion A - Level 1-2: Simple problem in familiar situations]



Q8. **Find** the value of x

$4^{2x-4} = 32^{x}$

[Criterion A - Level 3-4: Complex problem in familiar situations]

Q9. The point $P(x_1, 4)$ lies on the line passing through the point $Q(2, -3)$ and has as $m = -\frac{1}{2}$.

Find the coordinates of point P.

[Criterion A - Complex problem in a familiar situation: level 3-4]

Q10. Bag A contains 12 marbles of which 2 are red, and the remaining are black. Bag B contains 12 marbles, of which 5 are red and 7 are black. All marbles are identical. A marble is drawn at random from each bag simultaneously.

[Criterion A - Level 5-6: Challenging problem in familiar situations]

Find the probability that:

(i) Both the marbles are red.

(ii) Both the marbles are black.

(iii) one is black, and the other is red.

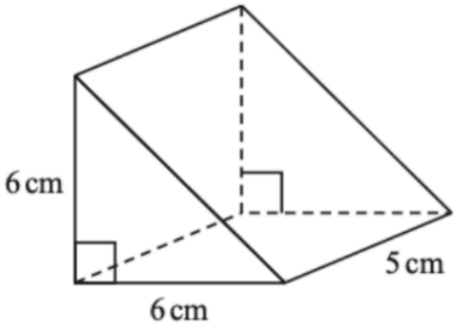
Q11. **Find** the value of a for the given equation:

$$(\frac{1}{16})^{2x} \times 16^{-2x-3} = 64^{2x}$$

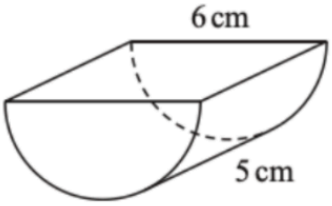
(Criterion A: Level 5-6: Challenging problems in familiar situations)

Q12.

The diagram shows two solid toy bricks, Brick **A** and Brick **B**.



Brick **A**



Brick **B**

Diagram **NOT** accurately drawn

Brick **A** is a triangular prism of length 5 cm.
The cross section of Brick **A** is an isosceles right-angled triangle with equal sides of length 6 cm.

Brick **B** is half a cylinder of length 5 cm.
The semicircular cross section of Brick **B** has diameter 6 cm.

The volume of Brick **A** is greater than the volume of Brick **B**.

[Criterion A - Level 7-8: Challenging problem in unfamiliar situations]