

INTRODUCTION TO COORDINATES

Form 1

Vol 6

Part 5 – Translation

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|------|------|------|------|
| 1. B | 2. C | 3. C | 4. B |
| 5. A | 6. C | 7. A | 8. A |

1.	B	Coordinates of $B = (3-4, -2-5) = (-1, -7)$.
2.	C	Coordinates of $Q = (-1+5, 8+2) = (4, 10)$.
3.	C	Translating B downwards by 5 units and rightwards by 7 units reaches point A . Coordinates of $A = (-4+7, -8-5) = (3, -13)$.
4.	B	Translating Q downwards by 3 units and leftwards by 2 units leftwards reaches point P . Coordinates of $P = (-1-2, 8-3) = (-3, 5)$.
5.	A	Segment MN is parallel to the x -axis. Thus, $2-y=5$, $y=-3$ Translating $M(1, 5)$ leftwards by 5 units reaches $N(-4, 5)$. Thus, $3+x=-4$ $x=-7$
6.	C	$AD = 4+8 = 12$ Height of $\triangle ACD$ corresponding to base $AD = 6$ Area of $\triangle ACD = \frac{12 \times 6}{2} = 36$ sq. units
7.	A	$AC = 10-6 = 4$ Height of $\triangle ACD$ corresponding to base $AC = 4$ Area of $\triangle ACD = \frac{4 \times 4}{2} = 8$ sq. units
8.	A	$AD = 8+k$ Height of $\triangle ACD$ corresponding to base $AD = 6$ Area of $\triangle ACD = \frac{(8+k) \times 6}{2} = 30$ sq. units $8+k=10$ $k=2$

Part 6 – Reflection

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|-------|-------|-------|------|-------|
| 1. A | 2. D | 3. B | 4. A | 5. D |
| 6. C | 7. A | 8. D | 9. C | 10. C |
| 11. C | 12. D | 13. B | | |

4.	A	The line is a vertical line passing through $P(1, 7)$. B has to be having the same y -coordinate as A does, while $AP = BP = 6 - 1 = 5$. Thus, the coordinates of B are $(1 - 5, 7) = (-4, 7)$.
5.	D	The line is a vertical line passing through $P(2, 5)$. B has to be having the same y -coordinate as A does, while $AP = BP = 2 - (-2) = 4$. Thus, the coordinates of B are $(2 + 4, 5) = (6, 5)$.
6.	C	The line is a horizontal line passing through $P(5, 4)$. A has to be having the same x -coordinate as B does, while $AP = BP = 4 - 1 = 3$. Thus, the coordinates of A are $(5, 4 + 3) = (5, 7)$.
7.	A	The line is a horizontal line passing through $P(2, 1)$. A has to be having the same x -coordinate as B does, while $AP = BP = 5 - 1 = 4$. Thus, the coordinates of A are $(2, 1 - 4) = (2, -3)$.
8.	D	Reflecting P about the y -axis will reverse the sign of the x -coordinate and reserve the y -coordinate of P . Thus, we have $P(3, -5)$ and $Q(-3, 5)$. $-x + 2 = -3$ $x = 5$ $2y + 1 = 5$ $y = 2$
9.	C	Reflecting A about the x -axis will reverse the sign of the y -coordinate and reserve the x -coordinate of A . Thus, we have $A(-6, 7)$ and $B(-6, -7)$. $3x + 3 = -6$ $x = -3$ $3 - 2y = 7$ $y = -2$

10.	C	L is a line passing through point $\left(k, \frac{-5+3}{2}\right) = (k, -1)$ for any constant k .
11.	C	L is a line passing through point $\left(\frac{-8+2}{2}, k\right) = (-3, k)$ for any constant k . Thus, $x + 3 = -3$, $x = -6$
12.	D	The line is a vertical line passing through $P(h + 1, k + 1)$. $BP = AP = h + 1 - (h - 5) = 6$ Thus, $AB = 6 + 6 = 12$ units.
13.	B	P is first reflected along the horizontal line passing through $(7, 5)$ to point $(7, 12)$. Then, $(7, 12)$ is reflected along the vertical line passing through $(3, 12)$ to point $(-1, 12)$.