



O Level Maths

Topic: Midpoint and Distance Formula

Instructions

Answer all questions. Show all necessary steps. Use the midpoint and distance formulas appropriately.

Practice Problems

Midpoint Formula:

1. Find the midpoint of the line segment joining the points $A(2, 3)$ and $B(4, 7)$.
2. Determine the midpoint of the segment joining $P(-1, 5)$ and $Q(3, -2)$.
3. Find the coordinates of the midpoint of the line segment joining $(6, 8)$ and $(-2, 4)$.
4. Find the midpoint of the segment joining $M(2, -3)$ and $N(4, 5)$.

Distance Formula:

5. Find the distance between the points $A(3, 4)$ and $B(6, 8)$.
6. Find the distance between the points $P(1, 2)$ and $Q(4, 6)$.
7. Determine the distance between $A(-2, -3)$ and $B(3, 1)$.
8. Find the distance between the points $(0, 0)$ and $(5, 12)$.

Multiple-Choice Questions

1. What is the distance between the points $(1, 2)$ and $(4, 6)$?
 - A. 5
 - B. $\sqrt{10}$
 - C. 3
 - D. $\sqrt{13}$
2. The midpoint of the segment joining $A(3, -4)$ and $B(1, 2)$ is:
 - A. $(2, -1)$
 - B. $(2, -2)$
 - C. $(1, -1)$
 - D. $(1, 2)$
3. The distance between the points $(2, 3)$ and $(-4, 1)$ is:
 - A. 6
 - B. $\sqrt{20}$
 - C. $\sqrt{26}$
 - D. 7
4. What is the formula for the distance between two points (x_1, y_1) and (x_2, y_2) ?
 - A. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
 - B. $d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$
 - C. $d = \frac{(x_2 - x_1)^2 + (y_2 - y_1)^2}{2}$
 - D. $d = (x_2 - x_1) + (y_2 - y_1)$
5. The midpoint of the line segment joining $A(1, 5)$ and $B(3, 7)$ is:
 - A. $(2, 6)$
 - B. $(1.5, 6)$
 - C. $(2, 7)$
 - D. $(1, 5)$

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