

5 Lecture - MTH101

Important Mcqs

1. What is the distance between points (3, 4) and (-2, 1)?
- A. 3
 - B. 5
 - C. 7
 - D. 9

Solution: B. Using the distance formula, the distance between the two points is $d = \sqrt{(-2 - 3)^2 + (1 - 4)^2} = \sqrt{25 + 9} = \sqrt{34} \approx 5.83$ units.

2. What is the center and radius of the circle with equation $(x + 2)^2 + (y - 5)^2 = 16$?
- A. Center: (-2, 5); Radius: 16
 - B. Center: (-2, 5); Radius: 4
 - C. Center: (2, -5); Radius: 4
 - D. Center: (2, -5); Radius: 16

Solution: A. The center of the circle is (-2, 5), and the radius is the square root of 16, which is 4.

3. What is the discriminant of the quadratic equation $2x^2 + 3x - 5 = 0$?
- A. -31
 - B. -11
 - C. 11
 - D. 31

Solution: D. The discriminant is $b^2 - 4ac = 3^2 - 4(2)(-5) = 31$, which is positive. Therefore, the equation has two real solutions.

4. What is the distance between points (-1, 2) and (3, -4)?
- A. 5
 - B. 6
 - C. 7
 - D. 8

Solution: B. Using the distance formula, the distance between the two points is $d = \sqrt{(3 - (-1))^2 + (-4 - 2)^2} = \sqrt{16 + 36} = \sqrt{52} \approx 7.21$ units.

5. What is the equation of the circle with center (-3, 4) and radius 6?
- A. $(x + 3)^2 + (y - 4)^2 = 6$
 - B. $(x - 3)^2 + (y + 4)^2 = 36$
 - C. $(x + 3)^2 + (y - 4)^2 = 36$
 - D. $(x - 3)^2 + (y + 4)^2 = 6$

Solution: C. The equation of a circle with center (h, k) and radius r is $(x - h)^2 + (y - k)^2 = r^2$. Therefore, the equation of the circle with center $(-3, 4)$ and radius 6 is $(x + 3)^2 + (y - 4)^2 = 36$.

6. What are the solutions of the quadratic equation $x^2 - 5x + 6 = 0$?

- A. $x = 2, x = 3$
- B. $x = 2, x = 4$
- C. $x = 3, x = 4$
- D. $x = 4, x = 5$

Solution: A. Factoring the quadratic equation gives $(x - 2)(x - 3) = 0$, so the solutions are $x = 2$ and $x = 3$.

7. What is the center and radius of the circle with equation $x^2 + y^2 - 6x + 8y - 19 = 0$?

- A. Center: $(3, -4)$; Radius: 5
- B. Center: $(-3, 4)$;