

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (131)
Recitation (2. 2)

Question 1. Which one of the following lines passes through the center of the circle $x^2 + 2x + y^2 - 6y = 0$?

- A) $5x + 2y = 1$ B) $3x + y = 2$ C) $x - 3y = 0$
 D) $3x + 2y = -3$ E) $y = 3x$

Answer: (A): $5x + 2y = 1$

Question 2. Determine which of the following equations represent a:
 (a) Circle (b) Point (c) Non existence

a) $x^2 + y^2 + 12x - 18y + 117 = 0$

Answer: Point

b) $x^2 + y^2 + 2x - 6y + 14 = 0$

Answer: Non existence

c) $9x^2 + 12x + 9y^2 - 18y - 23 = 0$

Answer: Equation of a circle

Question 3. Find the equation of a circle that has a diameter with end points $(-1, -2)$ and $(7, -2)$.

Answer: $(x - 3)^2 + (y + 2)^2 = 16$

Question 4. If the point $(0, -5)$ and (a, b) are the endpoints of a diameter of the circle $x^2 + y^2 - 2x + 4y - 5 = 0$. Then find a and b .

$a = 2$ and $b = 1$

Question 5:

Find the equation of a circle with center $(-2, 3)$ that is tangent to the y-axis is given by.

A) $x^2 + y^2 + 4x - 6y + 9 = 0$

B) $x^2 + y^2 + 4x - 6y + 11 = 0$

C) $x^2 + y^2 + 4x - 6y + 15 = 0$

D) $x^2 + y^2 - 4x - 6y - 9 = 0$

E) $x^2 + y^2 + 4x + 6y + 12 = 0$

Answer: (A): $x^2 + y^2 + 4x - 6y + 9 = 0$