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Matric No: 19/ENG006/059

Dept: Mechanical Engr.

3c 1. $(x-a)^2 + (y-b)^2 = r^2$

$$x^2 + y^2 - 5x - y + 4 = 0$$

$$x^2 - 5x + y^2 - y = -4$$

~~$(x^2 + 5x + 6.25) + (y^2 + y + 0.25) = 2.5$~~ $(x^2 + 5x + 6.25) + (y^2 + y + 0.25) =$

$$(x+2.5)^2 + (y-0.5) = 2.5$$

$$m_c = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - 0.5}{1 + 2.5} = -0.14$$

$$m = -1 = 7.14$$

$$\frac{-0.14}{-0.14}$$

equation = $\frac{1}{0.14}x + \frac{9}{2}$

2. $(x-a)^2 + (y-b)^2 = r^2$

$$x^2 + y^2 - 12x - 12y + 47 = 0$$

$$x^2 - 12x + y^2 - 12y = -47$$

$$(x^2 - 12x + 36) + (y^2 - 12y + 36) = 25$$

$$(x+6)^2 + (y-6)^2 = 25$$

$$m_c = \frac{0-6}{1+6} = \frac{-6}{7}$$

$$m = -1 \times \frac{-6}{7} = \frac{6}{7}$$

equation = $\frac{6}{7}x + \frac{9}{2}$

3. $(x-a)^2 + (y-b)^2 = r^2$

$$x^2 + y^2 - 8x + 14y + 40 = 0$$

$$x^2 - 8x + y^2 + 14y = -40$$

$$(x^2 - 8x + 16) + (y^2 + 14y + 49) = 25$$

$$(x+4)^2 + (y+7)^2 = 25$$

$$\text{mc} = \frac{0+7}{1+4} = \frac{7}{5}$$

$$m = -1 \times \frac{7}{5} = -\frac{7}{5}$$

$$\text{equation} = \text{\$} \frac{-7x}{5} + \frac{9}{2}$$