

OLATUNJI ANUOLUWAPO TEMIJOPE MAT 102.
COMPUTER ENGINEERING 19/ENG02/050.

Assignment.

1. $x^2 + y^2 + 2x + 6y + 6 = 0.$

Solution.

From $x^2 + y^2 + 2ax - 2by + c = 0.$

$$2x = -2ax$$

$$1 = -a.$$

$$\therefore a = -1.$$

$$6y = -2by$$

$$-2y = -2y$$

$$b = -3.$$

$$\therefore \text{Centre} = (-1, -3).$$

$$c = 6 = a^2 + b^2 - r^2.$$

$$6 = (-1)^2 + (-3)^2 - r^2.$$

$$r^2 = 1 + 9 - 6$$

$$\sqrt{r^2} = \sqrt{4}$$

$$\therefore r = 2.$$

$$2. \quad x^2 + y^2 - 4x + 10y - 8 = 0.$$

Solution.

$$\text{From } x^2 + y^2 - 2ax - 2by + c = 0.$$

$$-4x = -2ax$$

$$+2x = -2a$$

$$a = 2.$$

$$10y = -2by$$

$$-2y = -2b$$

$$b = -5.$$

$$\therefore \text{Centre} = (2, -5).$$

$$c = -8 = a^2 + b^2 - r^2.$$

$$-8 = 2^2 + (-5)^2 - r^2$$

$$r^2 = 4 + 25 + 8.$$

$$\sqrt{r^2} = \sqrt{37}$$

$$r = 6.08$$