## Equation of a Circle: Question 13

## Ana Bhattacharjee

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$$2(x^2 + y^2 - 4x + 5y + 1) = 0 (1)$$

$$\frac{2(x^2+y^2-4x+5y+1)}{2} = \frac{0}{2} \tag{2}$$

$$x^2 + y^2 - 4x + 5y = -1 (3)$$

$$2(x^{2} + y^{2} - 4x + 5y + 1) = 0$$

$$\frac{2(x^{2} + y^{2} - 4x + 5y + 1)}{2} = \frac{0}{2}$$

$$x^{2} + y^{2} - 4x + 5y = -1$$

$$(3)$$

$$(x^{2} - 4x + (\frac{-4}{2})^{2}) + (y^{2} + 5y + (\frac{5}{2})^{2}) = -1 + 4 + \frac{25}{4}$$

$$(x - 2)^{2} + (y + \frac{5}{2})^{2} = \frac{37}{4}$$

$$(5)$$

$$(x-2)^2 + (y+\frac{5}{2})^2 = \frac{37}{4}$$
 (5)

$$Center = (2, -\frac{5}{2}) \tag{6}$$

$$Radius = \sqrt{\frac{37}{4}}$$
 (7)