

Classwork: Circles

Identify the center and radius of each.

1) $(x + 15)^2 + (y - 12)^2 = 12$

$C: (-15, 12)$

$r = \sqrt{12} = 2\sqrt{3}$

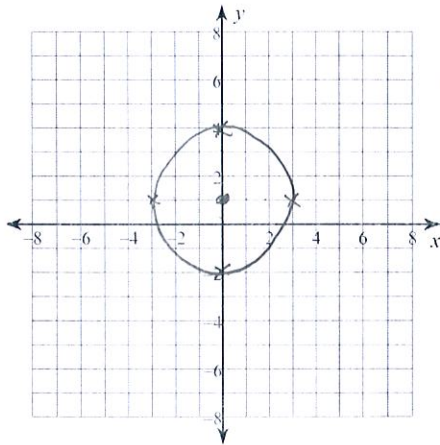
2) $(x + 1)^2 + (y - 4)^2 = 49$

$C: (-1, 4)$

$r = 7$

Identify the center and radius of each. Then sketch the graph.

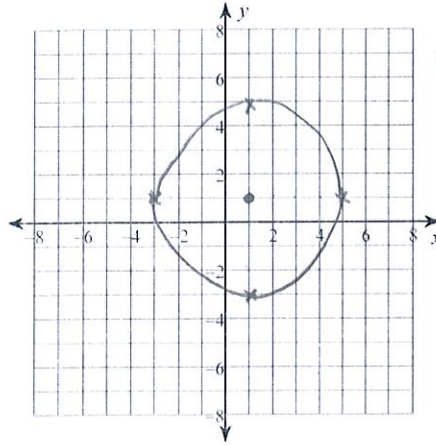
3) $x^2 + (y - 1)^2 = 9$



$C: (0, 1)$

$r = 3$

4) $(x - 1)^2 + (y - 1)^2 = 16$



$C: (1, 1)$

$r = 4$

Use the information provided to write the standard form equation of each circle.

5) $x^2 + y^2 - 30x - 26y + 390 = 0$

$x^2 - 30x + 225 + y^2 - 26y + 169 = 390 + 225 + 169$

$(x - 15)^2 + (y - 13)^2 = 4$

$(\frac{30}{2})^2 = 225$

$(\frac{26}{2})^2 = 169$

6) $x^2 + y^2 + 24x + 2y + 129 = 0$

$x^2 + 24x + 144 + y^2 + 2y + 1 = -129 + 144 + 1$

$(x + 12)^2 + (y + 1)^2 = 16$

$(\frac{24}{2})^2 = 144$ $(\frac{2}{2})^2 = 1$

$$7) x^2 + y^2 - 22y + 85 = 0$$

$$\left(\frac{22}{2}\right)^2 = 121 \quad x^2 + y^2 - 22y + \underline{121} = -85 + 121$$

$$x^2 + (y-11)^2 = 36$$

$$8) x^2 + y^2 - 16x - 18y + 109 = 0$$

$$x^2 - 16x + \underline{64} + y^2 - 18y + \underline{81} = -109 + 64 + 81$$

$$(x-8)^2 + (y-9)^2 = 36$$

Identify the center and radius of each. Then sketch the graph.

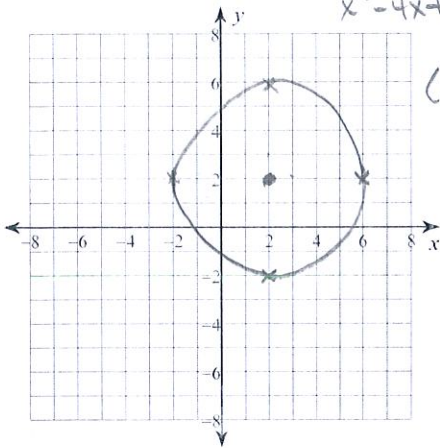
$$9) x^2 + y^2 - 4x - 4y - 8 = 0$$

$$x^2 - 4x + \underline{4} + y^2 - 4y + \underline{4} = 8 + 4 + 4$$

$$(x-2)^2 + (y-2)^2 = 16$$

$$C: (2, 2)$$

$$r = 4$$

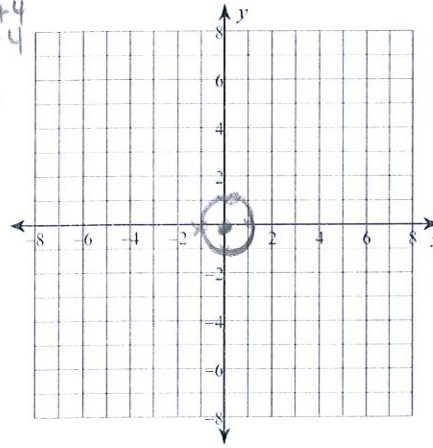


$$10) x^2 + y^2 - 1 = 0$$

$$x^2 + y^2 = 1$$

$$C: (0, 0)$$

$$r = 1$$



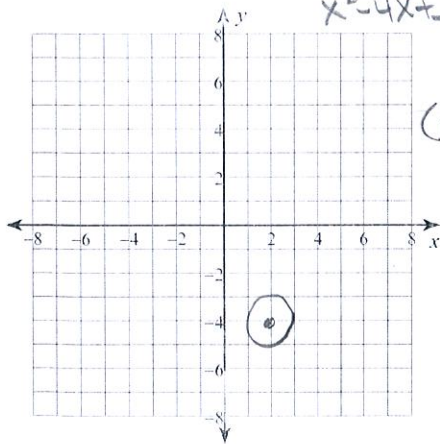
$$11) x^2 + y^2 - 4x + 8y + 19 = 0$$

$$x^2 - 4x + \underline{4} + y^2 + 8y + \underline{16} = -19 + 4 + 16$$

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

$$C: (2, -4)$$

$$r = 1$$



$$12) x^2 + y^2 + 6x - 8y + 21 = 0$$

$$x^2 + 6x + \underline{9} + y^2 - 8y + \underline{16} = -21 + 9 + 16$$

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

$$C: (-3, 4)$$

$$r = 2$$

