

Direction: Write the equation in standard form.

1) $x^2 + y^2 - 14y + 10 = 0$

$$-10 \quad -10$$

2) $x^2 + y^2 - 11x - 14.5 = 0$

$$(x - 5.5)^2 + y^2 = 44.75$$

$$x^2 + y^2 - 14y + \boxed{49} = -10 + \boxed{49}$$

$$\left(\frac{b}{2}\right)^2 = (y-7)^2$$

$$\left(-\frac{14}{2}\right)^2 = 49$$

$$\boxed{x^2 + (y-7)^2 = 39}$$

Directions: Find the center and radius of the circle.

3) $x^2 + y^2 - 15x + 10y + 81 = 0$

$$-81 \quad -81$$

4) $x^2 + y^2 + 10x = 0$

$$\rightarrow C: (-5, 0)$$

$$r: 5$$

$$x^2 - 15x + \frac{\boxed{225}}{4} + y^2 + 10y + \boxed{25} = -81 + \frac{\boxed{225}}{4} + \boxed{25}$$

$$\left(-\frac{15}{2}\right)^2 = \frac{225}{4}$$

$$\left(\frac{10}{2}\right)^2 =$$

$$\left(x - \frac{15}{2}\right)^2 + (y + 5)^2 = .25$$

$$C: \left(\frac{15}{2}, -5\right)$$

$$\text{or } (7.5, -5)$$

$$r: .5$$

$$\sqrt{r^2} = \sqrt{.25}$$

$$r = .5$$

Directions: Graph the circle.

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

$C: (-3, 6)$

$r: 6.4$

6) $x^2 + y^2 + 15x - 4y - 3.75 = 0$

$C: (-7.5, 2)$

$r: 8$



Directions: Complete the following using $x^2 + y^2 - 2x + 10y - 2 = 0$.

- ✓ • Find the equation in standard form.
- ✓ • Find the radius.
- Find the exact area of the circle.

$+2+2$

$a = \pi r^2$

$a = \pi(28)$

$a = 28\pi$

Circumference:
 $2\pi r$

$(2\pi)(2\sqrt{7}) = 4\sqrt{7}\pi$

$x^2 - 2x + \boxed{1} + y^2 + 10y + \boxed{25} = 2 + \boxed{1} + \boxed{25}$

$(\frac{-2}{2})^2 = 1$ $(\frac{10}{2})^2 = 25$

$(x-1)^2 + (y+5)^2 = \underline{\underline{28}}$

$r: \sqrt{28} \Rightarrow 2\sqrt{7}$

$\begin{matrix} \wedge \\ 4 \\ \text{---} \\ 2 \end{matrix}$

$\pi(2\sqrt{7})^2 = 28\pi$

Directions: Complete the following using $x^2 + y^2 + 20x - 13y - 26.75 = 0$.

- Find the equation in standard form.
- Find the radius.
- Find the exact area of the circle.

$(x+10)^2 + (y-6.5)^2 = 169$

$r = 13$

$A = 169\pi \text{ units}^2$