## Algebra II Worksheet \#1 Unit 7 Selected Solutions

Find PQ for each of the following. Round your answer to the nearest tenth.
2. $\mathrm{P}(9,1) ; \mathrm{Q}(2,5) ; \mathrm{PQ}=$ $\qquad$

$$
\begin{array}{rll}
P Q=\sqrt{\left(x_{2}-x_{1}\right)^{2}+\left(y_{2}-y_{1}\right)^{2}} & P Q=\sqrt{(2-9)^{2}+(5-1)^{2}} \\
x_{1}=9 & y_{1}=1 & P Q=\sqrt{(-7)^{2}+(4)^{2}}=\sqrt{49+16} \\
x_{2}=2 & y_{2}=5 & P Q=\sqrt{65} \approx 8.1
\end{array}
$$

For each of the following circles, write its equation in (a) standard form and (b) general form.
8.


Center (h, k) Radius: $\mathbf{r}$

$$
(x-h)^{2}+(y-k)^{2}=r^{2}
$$

Center ( $-4,-3$ ) Radius: 7

|  | $h=-4 ; k=-3 ; r=7$ |
| :--- | :--- |
|  | $(x--4)^{2}+(y--3)^{2}=7^{2}$ |
| a. | $(x+4)^{2}+(y+3)^{2}=49$ |

$$
x^{2}+8 x+16+y^{2}+6 y+9=49
$$

b. | $\mathbf{x}^{2}+y^{2}+8 x+6 y+25=49$ |
| :---: |
| $x^{2}+y^{2}+8 x+6 y-24=0$ |

Find the center and the radius measure of the circle described by each of the following equations.
15. $x^{2}+y^{2}+10 x-4 y+28=0$

$$
\begin{aligned}
& x^{2}+10 x \quad+y^{2}-4 y \quad=-28 \\
& x^{2}+10 x+25+y^{2}-4 y+4=-28+25+4 \\
& (x+5)^{2}+(y-2)^{2}=1 \\
& (x-h)^{2}+(y-k)^{2}=r^{2} \\
& h=-5 ; k=2 ; r=1
\end{aligned}
$$

Center (h, k) Radius: $\mathbf{r}$
Center (-5, 2) Radius: 1
I also graphed the circle.


