

Name: _____
 Date: _____
 Class: _____

Geometry
 Unit 10
 HW 10-5

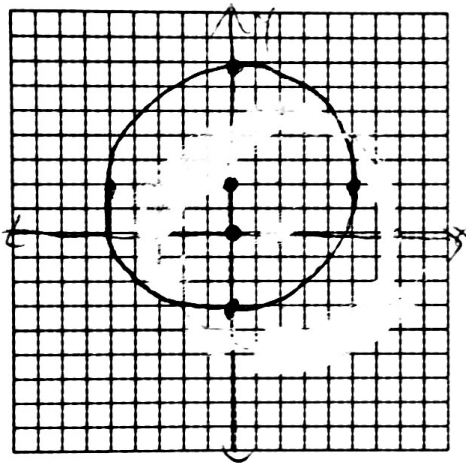
- 1) What is the center and radius of: $(x+4)^2 + (y-2)^2 = 100$?

$(-4, 2)$ $\sqrt{100} = 10$

- 2) Write the equation of a circle that has a center of $(-3, 4)$ and radius $\sqrt{5}$

$(x+3)^2 + (y-4)^2 = (\sqrt{5})^2$

- 3) Sketch the circle $x^2 + (y-2)^2 = 25$



$(0, 2)$ $r \rightarrow 5$

- 5) Write the equation of a circle with center $(0, 0)$ and radius 6.

$x^2 + y^2 = 6^2$

- 6) If $x^2 + 4x + y^2 - 6y - 12 = 0$ is the equation of a circle, the length of the radius is

$+12 \quad +12$

$x^2 + 4x + 4 + y^2 - 6y + 9 = 12 + 4 + 9$

$\frac{+4}{2} = (+2)^2 = 4$ $\frac{-6}{2} = (-3)^2 = 9$

$(x+2)^2 + (y-3)^2 = 25$

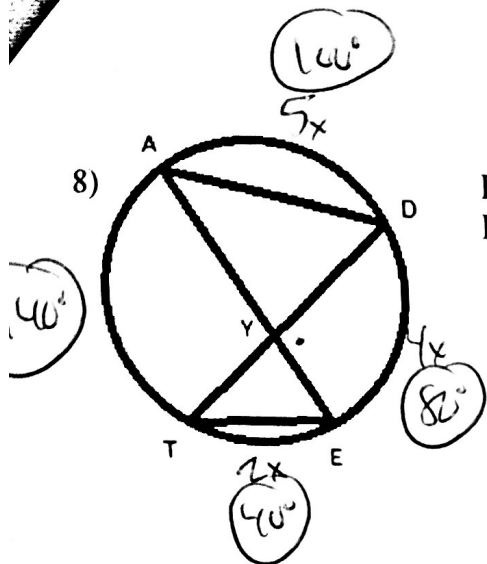
$r \rightarrow \sqrt{25} = 5$

- 7) What are the coordinates of the center and length of the radius of the circle whose equation is $x^2 + 6x + y^2 - 4y = 23$?

$\frac{+6}{2} = (+3)^2 = 9$ $\frac{-4}{2} = (-2)^2 = 4$

$(x+3)^2 + (y-2)^2 = 36$

$(-3, 2)$ $r = \sqrt{36} = 6$



In this circle, \overline{AE} is a diameter. $\widehat{AD}:\widehat{DE}:\widehat{TE} = 5:4:2$.
Find $m\angle DYE$.

$$5x + 4x = 9x = 180$$

$$x = 20$$

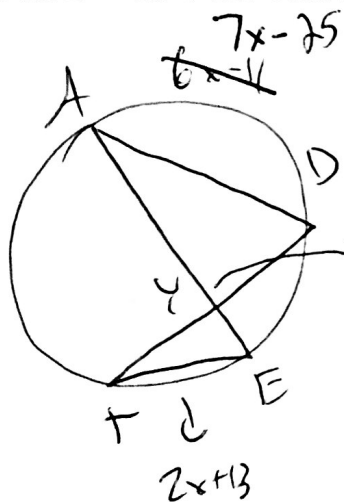
$$m\angle DYE = \frac{1}{2}(m\widehat{DE} + m\widehat{AT})$$

$$= \frac{1}{2}(140 + 80)$$

$$= \frac{1}{2}(220)$$

$$= 110^\circ$$

9) Using the diagram for #8, if $m\angle AYD = 4x + 1$, $m\widehat{AD} = \frac{7x - 25}{6x - 11}$ and $m\widehat{TE} = 2x + 13$. Find $m\angle TYE$.



$$m\angle AYD = \frac{1}{2}(m\widehat{AD} + m\widehat{TE})$$

$$2(4x + 1) = \frac{1}{2}(7x - 25 + 2x + 13)$$

$$8x + 2 = 9x - 12$$

$$14 = x$$

~~∠TYE~~ $\angle TYE \cong \angle AYD$ (vert. \angle 's)

$$4(14) + 1 = 57^\circ$$