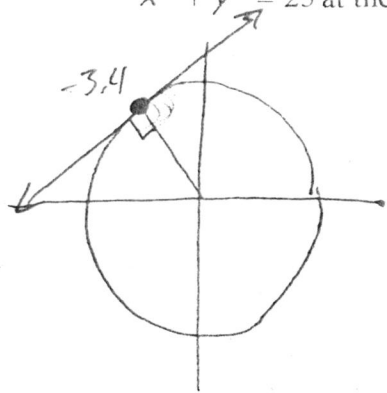


1. Write the equation of the line tangent to the circle

$$x^2 + y^2 = 25 \text{ at the point } (-3, 4)$$



$$y = \frac{3}{4}x + \frac{25}{4}$$

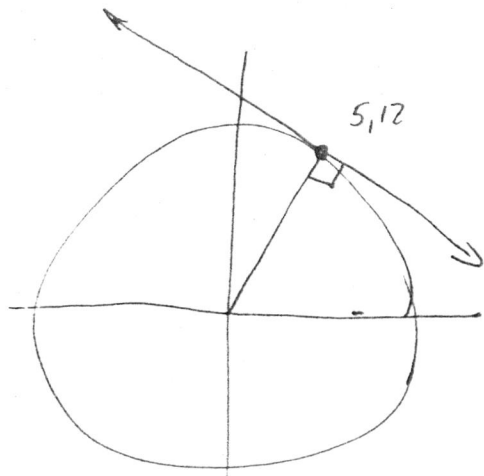
$$4 = \frac{3}{4} \cdot (-3) + b$$

$$4 = -\frac{9}{4} + b$$

$$\frac{25}{4} = b$$

2. Write the equation of the line tangent to the circle

$$x^2 + y^2 = 13^2 \text{ at the point } (5, 12)$$



$$y = -\frac{5}{12}x + \frac{169}{12}$$

$$12 = -\frac{5}{12} \cdot 5 + b$$

$$12 = -\frac{25}{12} + b$$

$$\frac{169}{12}$$

## ALGEBRA II HONORS

### CH 10 Review

Find the distance and midpoint of the segment connecting the points given. Round to the *hundredth*.

1. (7,9) and (2,-11) Dist:  $\sqrt{425} = 5\sqrt{17} \approx 20.62$

$$\text{Midpt: } \left(\frac{9}{2}, -1\right)$$

2. (-3,8) and (6,16) Dist:  $\sqrt{145} \approx 12.04$

$$\text{Midpt: } \left(\frac{3}{2}, 12\right)$$

3. (-26,51) and (32,74) Dist:  $\sqrt{3893} \approx 62.39$

$$\text{Midpt} = \left(3, \frac{125}{2}\right)$$

4. A grid is placed over a map of the US, so that Chillicothe, Florida is at coordinates (7, -2) and Billville, Idaho is at (-8, 5). If each grid unit represents 800 miles, how far apart are the cities?

$$D: \sqrt{274} \approx 16.55$$

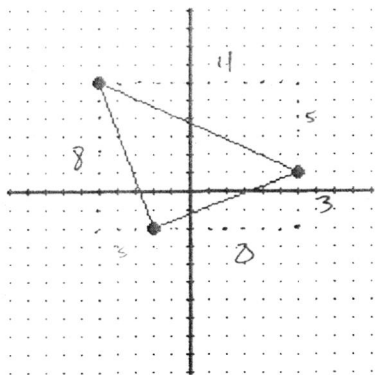
$$16.55 \times 800$$

$$13,240 \text{ mi}$$

\* not accurate!



1. Classify the triangle shown as scalene, isosceles or equilateral



8.5

8.5

12.1

Isosceles

2. The distance between the two points is given. Find the missing coordinate.

(8, -2) and (13, x) dist: 13

$$\sqrt{(13-8)^2 + (x+2)^2} = 13$$

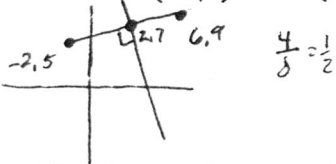
$$25 + (x+2)^2 = 169$$

$$(x+2)^2 = 144$$

$$x+2 = \pm 12$$

$$x = 10, -14$$

3. Write the equation of the perpendicular bisector of the segment between (-2, 5) and (6, 9)



$$y = -2x + 11$$

$$7 = 2 \cdot -2 + b$$

$$7 = -4 + b$$

4. The distance between the two points is given. Find the missing coordinate.

(3, -7) and (x, -5) dist:  $\sqrt{40}$

$$\sqrt{(-5+7)^2 + (x-3)^2} = \sqrt{40}$$

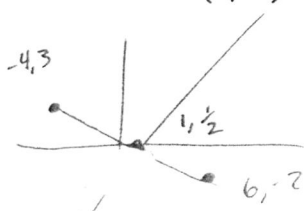
$$4 + (x-3)^2 = 40$$

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

$$x-3 = \pm 6$$

$$9, -3$$

5. Write the equation of the perpendicular bisector of the segment between (6, -2) and (-4, 3)



$$y = -2x + \frac{5}{2}$$

$$\frac{1}{2} = 2 \cdot 1 + b$$

$$\frac{1}{2} = 2 + b$$

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# CIRCLES

1. Write the equation of a circle with a center at the origin and with a radius of 7

$$x^2 + y^2 = 49$$

2. Write the equation of a circle with a center at the origin and passing through the point (3, 4)  $\rightarrow (0, 0)$  to  $(3, 4) \rightarrow 5$

$$x^2 + y^2 = 25$$

3. Write the equation of a circle with a center at (2, 7) and passing through the point (-5, -7)  $(2, 7)$  to  $(-5, -7)$

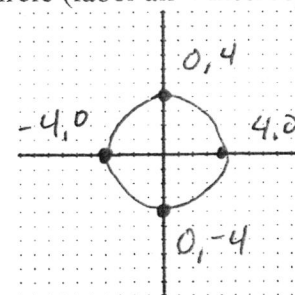
$$(x-2)^2 + (y-7)^2 = 245$$

D:  $\sqrt{245}$

4. Sketch the graph of the circle (label all 4 intercepts)

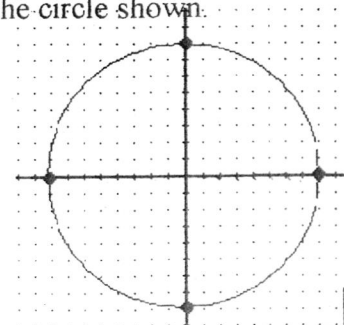
$$5x^2 + 5y^2 = 80$$

$$x^2 + y^2 = 16$$



5. Write the equation of the circle shown.

$$x^2 + y^2 = 64$$



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