

Adv. Alg.-Trig.  
Homework #11.3

**Tonight's Homework:**  
**Worksheet #11.4**  
Leave Radians as a fraction...  
Leave distances in simplest radical form...

|                        |                      |                        |                                    |
|------------------------|----------------------|------------------------|------------------------------------|
| 1) II                  | 2) III               | 3) Yes                 | 4) No                              |
| 5) $\frac{3\pi}{4}$    | 6) $\frac{7\pi}{12}$ | 7) $60^\circ$          | 8) $20^\circ$                      |
| 9) 1                   | 10) $\sqrt{3}$       | 11) $S = 50\text{in.}$ | 12) $\theta = \frac{3}{2}$ Radians |
| 13) $r = 8\text{ft.}$  | 14) $S = \theta r$   | 15) $S = 10\text{in.}$ | 16) $r = 7.5\text{ft.}$            |
| 17) $r = 6\text{ in.}$ |                      |                        |                                    |

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**Warm-Up**

Find  $S$ ,  $\theta$  or  $r$ .

- $S = 9\text{yd}$ ,  $r = 6\text{yd}$
- $S = 26\text{ in.}$ ,  $\theta = \frac{3}{4}$
- $\theta = 1.5$ ,  $r = 4$

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Not in notes...  
Remember the distance formula?

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Distance From A Point To The Origin

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$r$  = the radius vector  
 $P(x,y)$  = Point  $(x,y)$   
 $O$  = Origin  $(0,0)$

$a^2 + b^2 = c^2$   
 Pythagorean Theorem:

Distance Formula:  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$   
 Distance From a Point  $\rightarrow r = \sqrt{x^2 + y^2}$   
 the origin to

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Example:  
 Find the distance from the origin to the point  $P(4,3)$

Pythag. Triple  
 3, 4, 5  
 5, 12, 13  
 7, 24, 25  
 8, 15, 17

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Examples to Try with a Partner:  
 Find the distance from the origin to the following points

1) (5,12)      2) (2,-3/2)      3)  $(\sqrt{3},1)$

Handwritten calculations for point 2:  $2^2 + (\frac{3}{2})^2 = r^2$   
 $4 + \frac{9}{4} = r^2$   
 $\frac{16}{4} + \frac{9}{4} = r^2$   
 $\frac{25}{4} = r^2$   
 $\frac{5}{2} = r$

Handwritten notes for point 3:  $30, 60, 90$  and  $1 : \sqrt{3} : 2$

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