

Adv. Alg.-Trig.
Homework #11.4

Tonight's Homework:
Worksheet #11.5 ODDS

#18-20: State points in rectangular form. (x,y)
Leave Radians as a fraction...
Leave distances in simplest radical form...

- | | | | |
|-------------------------|---------------------|----------------|-----------------|
| 1) II | 2) IV | 3) No | 4) No |
| 5) $\frac{4\pi}{3}$ | 6) $\frac{9\pi}{5}$ | 7) 120° | 8) 40° |
| 9) $\frac{\sqrt{2}}{2}$ | 10) $\frac{1}{2}$ | 11) 30 | 12) 8 |
| 13) 10 | 14) $\sqrt{41}$ | 15) 17 | 16) $\sqrt{65}$ |
| 17) $\frac{5}{4}$ | 18) 1 | 19) $\sqrt{5}$ | |

Feb 13 - 8:52 AM

Warm-Up

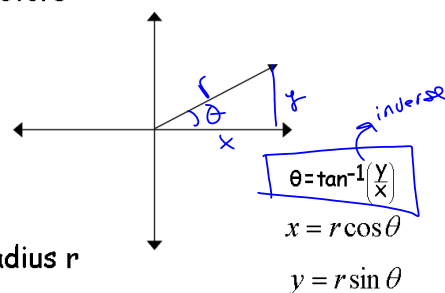
r = distance from origin.

- Find r . $(\sqrt{6}, \sqrt{2})$
- Find x . $r = 10, (x, 8)$
- Find y . $r = 2\sqrt{3}, (\sqrt{3}, y)$

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Expressing Rectangular Coordinates in Trig Form

I) Finding rectangular components of vectors:



Trigonometric Form: $(r \cos \theta, r \sin \theta)$

Pythag. Thm.

$r = \sqrt{x^2 + y^2}$

Oct 17 - 9:18 PM

Oct 17 - 9:19 PM

Examples:

- 1) If $\theta = 300^\circ$ and $r = 8$, find the rectangular coordinates of point P. (rectangular form)

Trig Form $\rightarrow (r \cos \theta, r \sin \theta)$

$(8 \cos 300, 8 \sin 300)$

$(4, -4\sqrt{3})$

Oct 17 - 9:20 PM

- 2) Express the coordinate pf P $(-5\sqrt{3}, 5)$ in trigonometric form.

We want r and θ

$(r \cos \theta, r \sin \theta)$

$5^2 + (5\sqrt{3})^2 = r^2$

$25 + 75 = r^2$

$100 = r^2$

$10 = r$

$(10 \cos 150, 10 \sin 150)$

Oct 17 - 9:20 PM

- 3) Find the length of the line segment that joins point P $(4 \cos \frac{5\pi}{6}, 4 \sin \frac{5\pi}{6})$ and point T $(0, -8)$.

Oct 17 - 9:21 PM

- 4) Express in trigonometric form.
 $(6, -7)$

Mar 2 - 8:57 AM

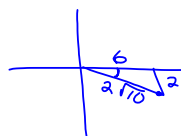
- 5) Express in trigonometric form.
 $(-5, 12)$

Mar 2 - 8:57 AM

- 6) Express in trigonometric form.

$$(-5\sqrt{2}, 5\sqrt{2})$$

Express $(6, -2)$ in Trig Form
 $(r \cos \theta, r \sin \theta)$



$$\tan^{-1} \frac{2}{6}$$

$$18^\circ 26' = \text{ref } \angle$$

$$\begin{array}{r} 359^\circ 60' \\ - 18^\circ 26' \\ \hline 341^\circ 34' \end{array}$$

$$(2\sqrt{10} \cos 341^\circ 34', 2\sqrt{10} \sin 341^\circ 34')$$

Mar 2 - 8:57 AM

11.5 odds only

- 7) Express in rectangular form.

$$r = 8, \theta = \frac{2\pi}{3}$$

Mar 2 - 8:57 AM

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Leave distances in simplest radical form...

Feb 9-9:22 AM

Feb 16-9:36 AM