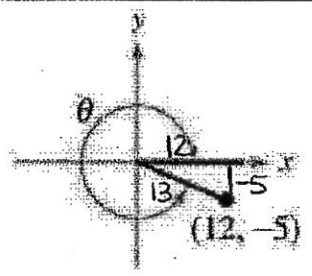
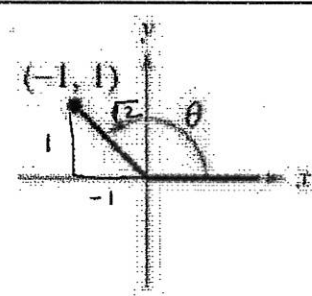


4.4 Worksheet-Day 1

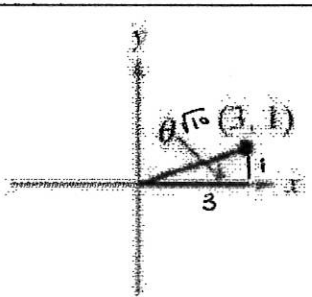
Determine the exact values of the six trigonometric functions of the angle θ .

1.  $r = \sqrt{(12)^2 + (-5)^2}$
 $r = \sqrt{144 + 25}$
 $r = \sqrt{169}$
 $* r = 13$

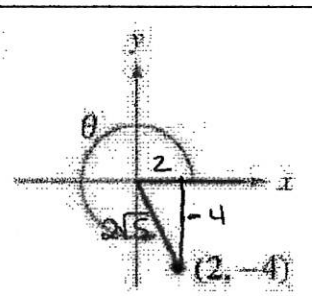
$\sin \theta = -\frac{5}{13}$ $\csc \theta = -\frac{13}{5}$
 $\cos \theta = \frac{12}{13}$ $\sec \theta = \frac{13}{12}$
 $\tan \theta = -\frac{5}{12}$ $\cot \theta = -\frac{12}{5}$

2.  $r = \sqrt{(-1)^2 + (1)^2}$
 $r = \sqrt{1+1}$
 $* r = \sqrt{2}$

$\sin \theta = \frac{\sqrt{2}}{2}$ $\csc \theta = \sqrt{2}$
 $\cos \theta = -\frac{\sqrt{2}}{2}$ $\sec \theta = -\sqrt{2}$
 $\tan \theta = -1$ $\cot \theta = -1$

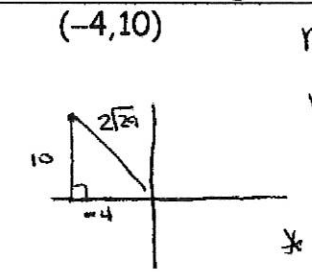
3.  $r = \sqrt{(3)^2 + (1)^2}$
 $r = \sqrt{9+1}$
 $* r = \sqrt{10}$

$\sin \theta = \frac{\sqrt{10}}{10}$ $\csc \theta = \sqrt{10}$
 $\cos \theta = \frac{3\sqrt{10}}{10}$ $\sec \theta = \frac{\sqrt{10}}{3}$
 $\tan \theta = \frac{1}{3}$ $\cot \theta = 3$

4.  $r = \sqrt{(2)^2 + (-4)^2}$
 $r = \sqrt{4+16}$
 $r = \sqrt{20}$
 $* r = 2\sqrt{5}$

$\sin \theta = -\frac{2\sqrt{5}}{5}$ $\csc \theta = -\frac{\sqrt{5}}{2}$
 $\cos \theta = \frac{\sqrt{5}}{5}$ $\sec \theta = \sqrt{5}$
 $\tan \theta = -2$ $\cot \theta = -\frac{1}{2}$

The given point is on the terminal side of an angle in standard position. Determine the exact values of the six trigonometric functions of the angle.

5. $(-4, 10)$  $r = \sqrt{(-4)^2 + (10)^2}$
 $r = \sqrt{16+100}$
 $r = \sqrt{116}$
 $* r = 2\sqrt{29}$

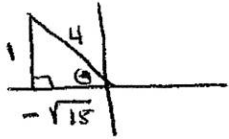
$\sin \theta = \frac{5\sqrt{29}}{29}$ $\csc \theta = \frac{\sqrt{29}}{5}$
 $\cos \theta = -\frac{2\sqrt{29}}{29}$ $\sec \theta = -\frac{\sqrt{29}}{2}$
 $\tan \theta = -\frac{5}{2}$ $\cot \theta = -\frac{2}{5}$

State the quadrant in which θ lies.

6. $\sin\theta < 0$ and $\cos\theta < 0$ III IV II III	Quad III	7. $\sec\theta > 0$ and $\cot\theta < 0$ I IV II IV	QuAD IV
8. $\cot\theta > 0$ and $\cos\theta > 0$ I III I IV	QuAD I	9. $\tan\theta > 0$ and $\csc\theta < 0$ I III III IV	QuAD III

Find the values of the six trigonometric functions of θ .

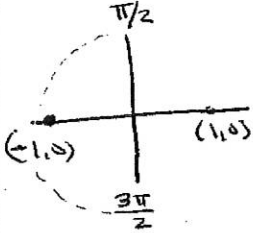
10. $\csc\theta = 4$ and $\cot\theta < 0$ QUAD II
I II II IV



$x = \sqrt{4^2 - (1)^2}$
 $x = \sqrt{16 - 1}$
 $x = \sqrt{15}$
 $* x = -\sqrt{15}$

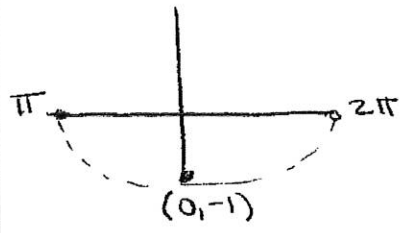
$\sin\theta = \frac{1}{4}$	$\csc\theta = 4$
$\cos\theta = -\frac{\sqrt{15}}{4}$	$\sec\theta = -\frac{4\sqrt{15}}{15}$
$\tan\theta = -\frac{\sqrt{15}}{15}$	$\cot\theta = -\sqrt{15}$

11. $\sin\theta = 0$ and $\frac{\pi}{2} \leq \theta \leq \frac{3\pi}{2}$ * QUADRANTAL



$\sin\theta = 0$	$\csc\theta = \text{und.}$
$\cos\theta = -1$	$\sec\theta = -1$
$\tan\theta = 0$	$\cot\theta = \text{und.}$

12. $\tan\theta$ is undefined and $\pi \leq \theta \leq 2\pi$ * QUADRANTAL



$\sin\theta = -1$	$\csc\theta = -1$
$\cos\theta = 0$	$\sec\theta = \text{und.}$
$\tan\theta = \text{und.}$	$\cot\theta = 0$

Evaluate the trigonometric function of the quadrantal angle.

13. $\sec\pi$ $(-1, 0)$ $\cos\pi = -1$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\sec\pi = -1$</div>	14. $\tan\left(\frac{\pi}{2}\right)$ $(0, 1)$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\tan\frac{\pi}{2} = \text{und.}$</div>	15. $\cot\left(\frac{3\pi}{2}\right)$ $(0, -1)$ $\tan\frac{3\pi}{2} = \text{und.}$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\cot\frac{3\pi}{2} = 0$</div>	16. $\csc(0)$ $(1, 0)$ $\sin 0 = 0$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\csc\theta = \text{und.}$</div>
17. $\sec 0$ $(1, 0)$ $\cos 0 = 1$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\sec 0 = 1$</div>	18. $\csc\left(\frac{3\pi}{2}\right)$ $(0, -1)$ $\sin\frac{3\pi}{2} = -1$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\csc\frac{3\pi}{2} = -1$</div>	19. $\cot(\pi)$ $(-1, 0)$ $\tan\pi = \frac{0}{1}$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\cot\pi = \text{und.}$</div>	20. $\csc\frac{\pi}{2}$ $(0, 1)$ $\sin\frac{\pi}{2} = 1$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">$\csc\frac{\pi}{2} = 1$</div>

