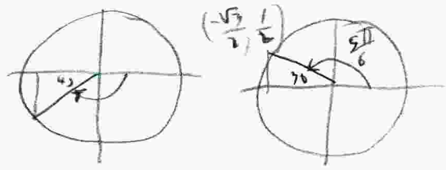
Key A

Find the point (x,y) on the unit circle that corresponds to the real number t (3 pt each problem)

10. $t = \frac{-3\pi}{4}$ $\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$

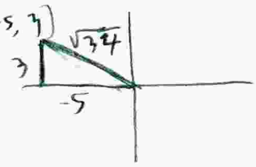
11. $t = \frac{5\pi}{6}$ $\left(-\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$



12. Find the exact values of the trigonometric functions below, if (–5, 3) is a point on the terminal side of θ.
(3 points each blank)

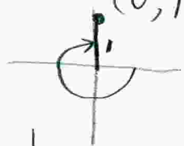
tan θ = $-\frac{3}{5}$ sin θ = $\frac{3}{\sqrt{34}} = \frac{3\sqrt{34}}{34}$ cos θ = $\frac{-5}{\sqrt{34}} = \frac{-5\sqrt{34}}{34}$

$\sqrt{9+25}$
$\sqrt{34}$



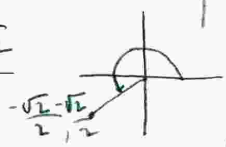
Find the exact values (if possible) of the trigonometric functions below with the given angle θ.
(2 points each blank)

13. $\theta = \frac{-3\pi}{2}$ tan θ = undefined sin θ = 1 sec θ = undefined



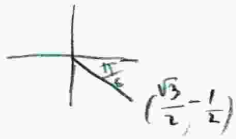
14. $\theta = \frac{5\pi}{4}$ cos θ = $\frac{-\sqrt{2}}{2}$ cot θ = 1 csc θ = $-\sqrt{2}$

$\frac{1}{-\frac{\sqrt{2}}{2}}$ $\frac{\sqrt{2}}{\sqrt{2}}$



15. $\theta = \frac{-\pi}{6}$ tan θ = $\frac{-1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$ sin θ = $-\frac{1}{2}$ sec θ = $\frac{2\sqrt{3}}{3}$

$\frac{1}{\frac{\sqrt{3}}{2}} \cdot \frac{2}{2} = \frac{2}{\sqrt{3}}$



State the quadrant in which θ lies. (2 points each blank)

16. sin θ < 0 and cos θ > 0 IV

17. sin θ > 0 and tan θ < 0 II

18. Sketch a right triangle corresponding to the trigonometric function of the acute angle θ, **(2 points each blank)** then find the indicated trigonometric functions of θ.

$\sin \theta = \frac{5}{7}$ csc θ = $\frac{7}{5}$ sec θ = $\frac{7}{2\sqrt{6}} = \frac{7\sqrt{6}}{12}$ cos θ = $\frac{2\sqrt{6}}{7}$

$\sqrt{49-25}$

Complete the Pythagorean Identities below: (2 points each blank)

19. $\sin^2 \theta$ + $\cos^2 \theta$ = 1

20. 1 + $\tan^2 \theta$ = $\sec^2 \theta$

21. Find the reference angle **θ', and sketch** θ and θ' in standard position. **(4 pt each problem)**

$\theta = \frac{-2\pi}{3}$ **θ'** = $\frac{\pi}{3}$