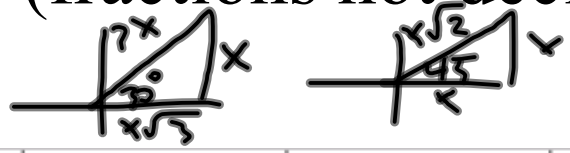
Algebra II\ Trig Ch. 13: 13.3-13.5 Quiz

1 - 15. Give exact values (fractions not decimals) for the following identities.

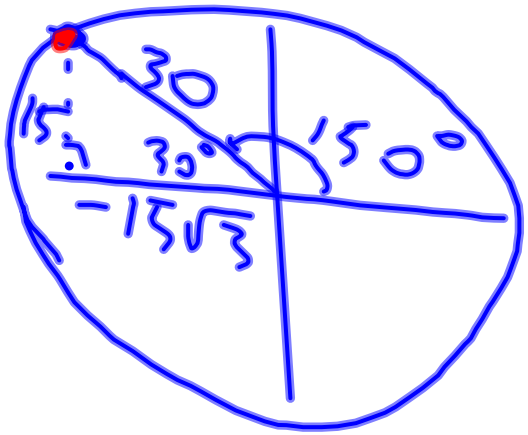


	0°	30°	45°	60°	90°
sin	$0 \frac{\sqrt{0}}{2}$	$\frac{1}{2} \frac{\sqrt{1}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$1 \frac{\sqrt{4}}{2}$
cos	$1 \frac{\sqrt{4}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2} \frac{\sqrt{1}}{2}$	$0 \frac{\sqrt{0}}{2}$
tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	und.

P is located at the intersection of a circle with radius, r, and the terminal side of angle θ in standard position. Find the exact coordinates of P.

16. $\theta = 150°, r = 30$

$(-15\sqrt{3}, 15)$

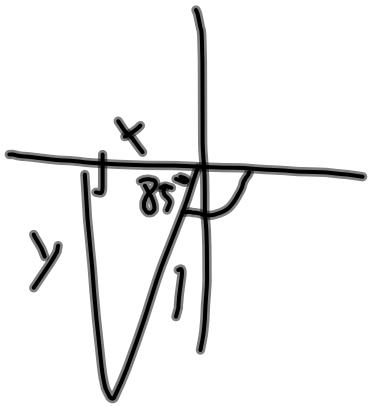


P is located at the intersection of a unit circle and the terminal side of angle θ in standard position. Find the coordinates of P to the nearest hundredth.

17. $\theta = -95°$ $r = 1$

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

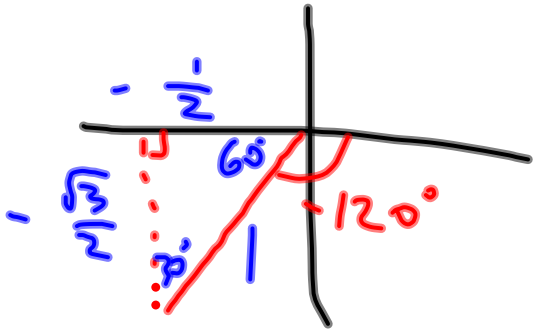
$(-.09, -1.00)$



P is located at the intersection of a unit circle and the terminal side of angle θ in standard position. Find the coordinates of P to the nearest hundredth.

17. $\theta = -120^\circ$

$\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$



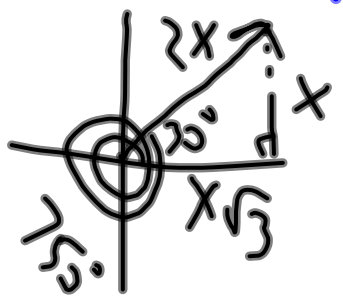
Find the exact values of sine, cosine, and tangent of each angle.

18. 750°

$\sin 750° = \frac{1}{2}$

$\cos 750° = \frac{\sqrt{3}}{2}$

$\tan 750° = \frac{1}{\sqrt{3}}$

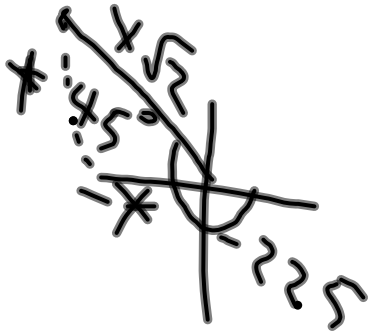


19. −945°

$\sin(-945°) = \frac{\sqrt{2}}{2}$

$\cos(-945°) = -\frac{\sqrt{2}}{2}$

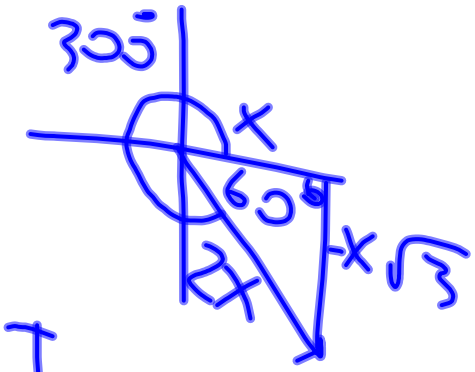
$\tan(-945°) = -1$



Find each trig value. Give exact answers

20. $\cot 300°$

$\cot 300° = -\frac{1}{\sqrt{3}}$



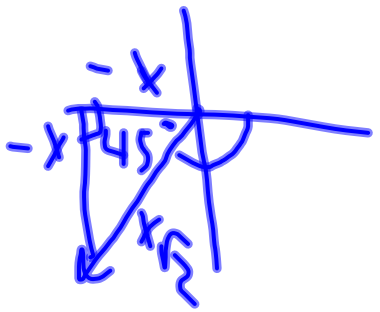
$\tan 60° = \frac{x\sqrt{3}}{x} = \sqrt{3}$

21. $\tan\left(-\frac{3\pi}{4}\right)$

$-\frac{3\pi}{4} \cdot \frac{180}{\pi} = -135°$

45°

$\tan\left(-\frac{3\pi}{4}\right) = 1$



A circle has a diameter of 12 ft. For each central angle measure below, find the length, in feet, of the arc intercepted by the angle, and find the Area of the sector.

$s = r\theta$

$A = \frac{1}{2} r^2 \theta$

22. $\frac{\pi}{12}$ *radians*

$s = 6 \cdot \frac{\pi}{12} = \frac{\pi}{2}$ ft. ≈ 1.57 ft.

$A = \frac{1}{2} 6^2 \frac{\pi}{12} = \frac{3\pi}{2}$ ft^2 ≈ 4.71 ft^2

23. $60° \cdot \frac{\pi}{180} = \frac{\pi}{3}$

$s = 6 \cdot \frac{\pi}{3} = 2\pi$ ft ≈ 6.28 ft

$A = \frac{1}{2} 6^2 \frac{\pi}{3} = 6\pi$ ft^2 ≈ 18.85 ft^2

Identify the amplitude, period, phase shift, and vertical translation of each function from its parent function.

24. $-\frac{1}{5}\sin\frac{1}{3}(\theta+20^\circ)-6$

Amplitude $= \frac{1}{5}$

Period $= 6\pi$

phase shift $= 20^\circ$ left

Vert. Trans. $=$ 6 down

25. $4\cos 2(\theta - 40^\circ) - 3$

Amplitude = 4

Period = π

phase shift = 40° right

Vert. Trans. = 3 down