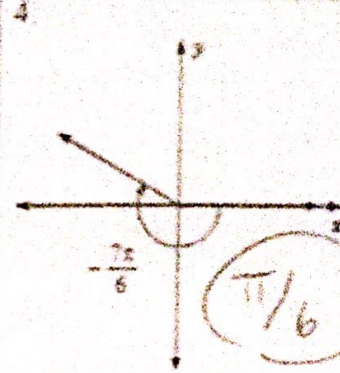
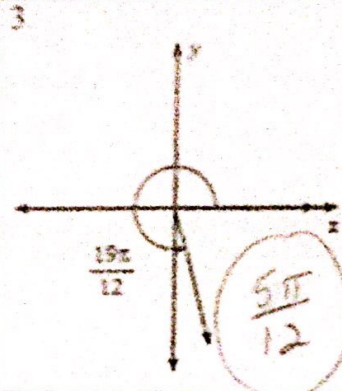
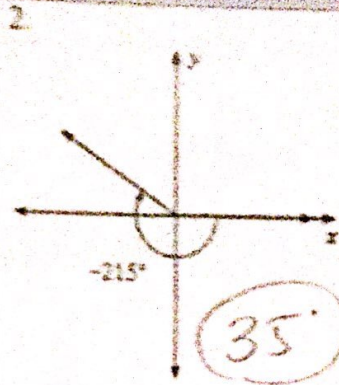
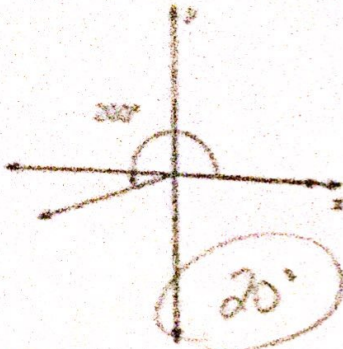


Honors Pre-Calculus
9.2-9.3 Video Practice

Name: Key
Date: _____ Block: _____

Find the reference angle.



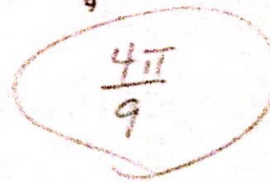
5. -130°



6. 230°



7. $-\frac{13\pi}{9}$



8. $\frac{3\pi}{4}$



Find the exact value.

9. $\sin 90^\circ = 1$

10. $\cos 120^\circ = -\frac{1}{2}$

11. $\tan 45^\circ = 1$

12. $\tan 120^\circ = -\sqrt{3}$

13. $\cos 225^\circ = -\frac{\sqrt{2}}{2}$

14. $\sin 135^\circ = \frac{\sqrt{2}}{2}$

15. $\sin 330^\circ = -\frac{1}{2}$

16. $\tan 315^\circ = -1$

17. $\cos 240^\circ = -\frac{1}{2}$

18. $\sin(-225^\circ) = \frac{\sqrt{2}}{2}$

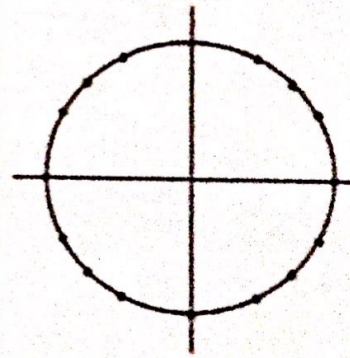
19. $\cos(-240^\circ) = -\frac{1}{2}$

20. $\tan(-300^\circ) = \sqrt{3}$

21. $\sec(180^\circ) = -1$

22. $\csc(-270^\circ) = 1$

23. $\cot(-315^\circ) = 1$



Find the exact value.

24. $\sin \frac{\pi}{2} = 1$

25. $\tan \frac{\pi}{4} = 1$

26. $\cos \frac{3\pi}{2} = 0$

27. $\cos \frac{4\pi}{3} = -\frac{1}{2}$

28. $\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$

29. $\tan \pi = 0$

30. $\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$

31. $\cos \frac{5\pi}{3} = \frac{1}{2}$

32. $\sin \frac{5\pi}{6} = \frac{1}{2}$

33. $\tan \frac{7\pi}{4} = -1$

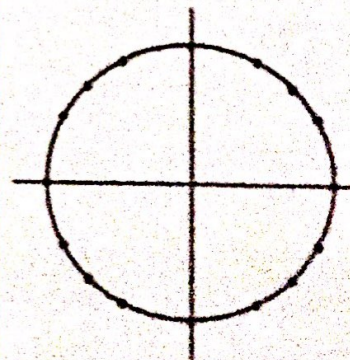
34. $\sin(-\pi) = 0$

35. $\tan\left(-\frac{3\pi}{2}\right) = X$

36. $\cos\left(-\frac{\pi}{3}\right) = \frac{1}{2}$

37. $\sec\left(-\frac{\pi}{2}\right) = X$

38. $\sin\left(-\frac{5\pi}{4}\right) = \frac{\sqrt{2}}{2}$



If $0^\circ < \theta < 360^\circ$, then find θ

39. $\sin \theta = \frac{1}{2}$ 150° 30°	40. $\cos \theta = \frac{\sqrt{3}}{2}$ 330° 30°	41. $\tan \theta = -\sqrt{3}$ 120° 300°
42. $\sin \theta = \frac{\sqrt{2}}{2}$ 135° 45°	43. $\cos \theta = -\frac{\sqrt{2}}{2}$ 225° 135°	44. $\tan \theta = -\frac{\sqrt{3}}{3}$ 150° 330°
45. $\csc \theta = 2$ 30° 150°	46. $\sec \theta = -2$ 120° 240°	47. $\cot \theta = \text{undefined}$ 0° 180° 360°

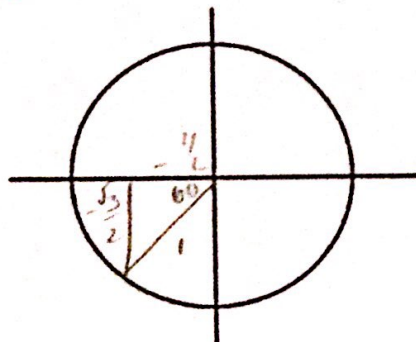
If you like pictures of circles, you can draw one here!

If $0\pi < \theta < 2\pi$, then find θ

48. $\sin \theta = \frac{\sqrt{3}}{2}$ $\frac{\pi}{3}$ $2\pi/3$	49. $\tan \theta = 1$ $\pi/4$ $5\pi/4$	50. $\cos \theta = \frac{\sqrt{2}}{2}$ $\pi/4$ $7\pi/4$
51. $\cos \theta = -\frac{1}{2}$ $2\pi/3$ $4\pi/3$	52. $\tan \theta = \sqrt{3}$ $\pi/3$ $4\pi/3$	53. $\cos \theta = 0$ $\pi/2$ $3\pi/2$
54. $\csc \theta = \text{undefined}$ $0, \pi, 2\pi$	55. $\cot \theta = -1$ $3\pi/4$ $7\pi/4$	56. $\sin \theta = -\frac{1}{2}$ $7\pi/6$ $11\pi/6$

If you like pictures of circles, you can draw one here!

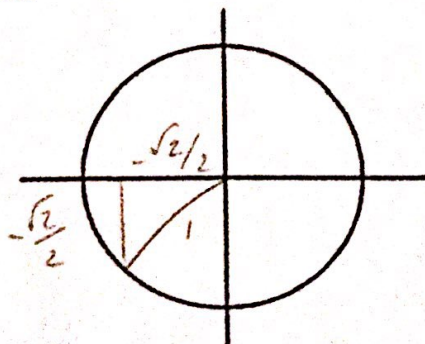
57. Fill in the table below.



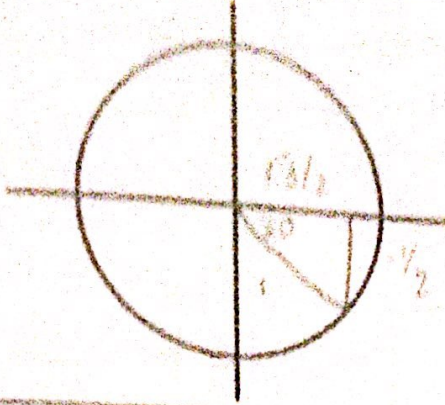
$\frac{H}{O}$ $\frac{H}{A}$

degrees	radians	$\sin \theta$	$\cos \theta$	$\tan \theta$	$\csc \theta$	$\sec \theta$	$\cot \theta$	- degree	- radian
240°	$4\pi/3$	$-\sqrt{3}/2$	$-1/2$	$\sqrt{3}$	$-2\sqrt{3}/3$	-2	$\sqrt{3}/3$	-120°	$-2\pi/3$

58. Fill in the table below.



degrees	radians	$\sin \theta$	$\cos \theta$	$\tan \theta$	$\csc \theta$	$\sec \theta$	$\cot \theta$	- degree	- radian
225	$5\pi/4$	$-\sqrt{2}/2$	$-\sqrt{2}/2$	1	$-\sqrt{2}$	$-\sqrt{2}$	1	-135°	$-\frac{3\pi}{4}$



degrees	radians	sin θ	cos θ	tan θ	csc θ	sec θ	cot θ	degree	radian
330	$\frac{11\pi}{6}$	$-\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{3}$	-2	$\frac{2\sqrt{3}}{3}$	$-\sqrt{3}$	-30	$-\frac{\pi}{6}$

9.3 Video

Use the table to find the EXACT value.

1. csc 135° $\sqrt{2}$	2. sin π 0	3. cot(- $\frac{11\pi}{6}$) = $\frac{\pi}{6}$ $\sqrt{3}$	4. sec(-90°) $\frac{1}{\cos 90^\circ} = \text{undefined}$
5. sin 315° $-\frac{\sqrt{2}}{2}$	6. sin $\frac{7\pi}{6}$ $-\frac{1}{2}$	7. tan 765° 1	8. cot - $\frac{5\pi}{6}$ = $-\frac{5\pi}{6}$ $-\sqrt{3}$
9. csc -135° $\frac{1}{\sin 135^\circ} = \sqrt{2}$	10. cos -90° = $-\pi$ -1	11. sec -690° $\frac{1}{\cos 690^\circ} = \frac{2\sqrt{3}}{3}$	12. tan $\frac{11\pi}{6}$ $-\frac{\sqrt{3}}{3}$

Use the calculator to find the APPROXIMATE value of each.

13. csc 80° 1.0154	14. cot 15° 3.7321	15. sec 40° 1.3054	16. sin 51° .7771
17. sin $\frac{\pi}{18}$.1736	18. tan $\frac{7\pi}{18}$ 2.7475	19. cot $\frac{23\pi}{90}$.9657	20. cot $\frac{\pi}{5}$ 1.3764
21. csc $\frac{\pi}{18}$ 5.7588	22. sec 115° -2.3662	23. csc $\frac{5\pi}{18}$ 1.3054	24. sin 1.2 radians .93



Use the table to find the each angle where $0^\circ \leq \theta < 360^\circ$.

25. $\cos \theta = -\frac{1}{2}$ $120^\circ, 240^\circ$	26. $\csc \theta = \frac{2\sqrt{3}}{3}$ $\frac{1}{\sin \theta}$ $60^\circ, 120^\circ$	27. $\tan \theta = \text{undefined}$ $\frac{\sin \theta}{\cos \theta}$ $90^\circ, 270^\circ$	28. $\sin \theta = -\frac{\sqrt{2}}{2}$ $315^\circ, 225^\circ$
29. $\csc \theta = 1$ $\frac{1}{\sin \theta}$ 90°	30. $\sec \theta = \sqrt{2}$ $\frac{1}{\cos \theta}$ $45^\circ, 315^\circ$	31. $\tan \theta = 0$ $\frac{\sin \theta}{\cos \theta}$ $0^\circ, 180^\circ, 360^\circ$	32. $\sin \theta = 0$ $0^\circ, 180^\circ, 360^\circ$

Use the calculator to find each angle where $0^\circ \leq \theta < 360^\circ$. Round to the nearest hundredth.

33. $\cos \theta = 0.7314$ $43^\circ, 317^\circ$	34. $\sin \theta = -0.9336$ -69° $= 291^\circ$ $= 249^\circ$	35. $\tan \theta = 0.4245$ $23^\circ, 203^\circ$
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36. $\sec \theta = -1.589$ $129^\circ, 231^\circ$	37. $\cot \theta = 0.30573$ $73^\circ, 253^\circ$	38. $\csc \theta = 1.0306$ $76^\circ, 104^\circ$
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39. $\tan \theta = 1.156$ $49.14^\circ, 229.14^\circ$	40. $\sin \theta = -0.6254$ -38.71155° $\approx 321.29^\circ$ $\approx 218.71^\circ$	41. $\cot \theta = -0.484$ -64.17° $\approx 295.83^\circ$ $\approx 115.83^\circ$ HW: pg 347
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