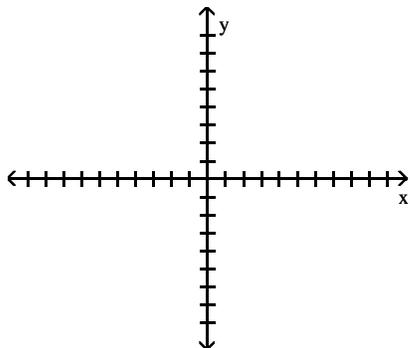


MATH 244/GRACEY
5.3 PRACTICE

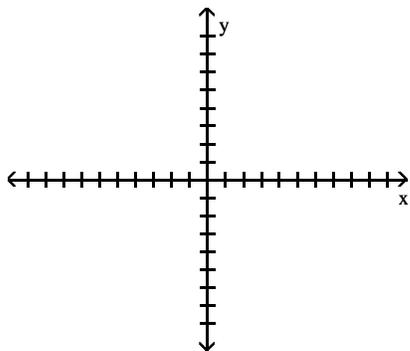
Name _____

Sketch an angle θ in standard position such that θ has the smallest positive measure and the given point is on the terminal side of θ .

1) (3, 6)



2) (-2, 5)



4) (-15, 36); Find $\sin \theta$.

5) (15, 20); Find $\csc \theta$.

6) (0, -6); Find $\sec \theta$.

7) (-3, 8); Find $\tan \theta$.

If r is a positive number and the point (x, y) is in the indicated quadrant, decide whether the given ratio is positive or negative.

8) II, $\frac{r}{x}$

9) III, $\frac{x}{y}$

Suppose that θ is in standard position and the given point is on the terminal side of θ . Give the exact value of the indicated trig function for θ .

3) (3, 4); Find $\sin \theta$.

10) IV, $\frac{r}{y}$

If n is an integer, $n \cdot 180^\circ$ represents an integer multiple of 180° , and $(2n + 1) \cdot 90^\circ$ represents an odd integer multiple of 90° . Decide whether the expression is equal to 0, 1, -1, or is undefined.

16) $\sin(n \cdot 180^\circ)$

A is an angle in standard position and satisfies the given conditions. Find the indicated trigonometric function value of A. Do not use a calculator.

11) The terminal side of A is in quadrant I and lies on the line $y = 9x$. Find $\sin A$.

17) $\sec((2n + 1) \cdot 90^\circ)$

12) The terminal side of A is in quadrant IV and lies on the line $4x + 5y = 0$. Find $\cot A$.

Place your graphing calculator in parametric and degree modes. Set the window for $T_{\min}=0$, $T_{\max}=360$, $T_{\text{step}}=1$, $X_{\min}=-1.8$, $X_{\max}=1.8$, $X_{\text{scl}}=1$, $Y_{\min}=-1.2$, $Y_{\max}=1.2$, $Y_{\text{scl}}=1$. Set the functions to $X_1T=\cos T$, $Y_1T=\sin T$. Graph the circle of radius 1 on the screen. Use the trace feature to move a short distance around the circle.

18) For what angle T is $\cos T \approx 0.866$? (Assume $0^\circ \leq T \leq 90^\circ$.)

Evaluate the expression.

13) $\sin^2 90^\circ + \cos^2 90^\circ$

19) For what angle T is $\cos T \approx 0.642$? (Assume $0^\circ \leq T \leq 90^\circ$.)

14) $\cot^2 90^\circ - \sec 180^\circ$

20) For what angle T is $\cos T \approx 0.174$? (Assume $0^\circ \leq T \leq 90^\circ$.)

15) $\cot 270^\circ + 8 \cos 180^\circ + 5 \sec^2 360^\circ$

21) For what angle T is $\sin T \approx 0.259$? (Assume $0^\circ \leq T \leq 90^\circ$.)

28) $A = 158^\circ$

22) As the cosine increases for $0^\circ \leq T \leq 90^\circ$, does the sine increase or decrease?

29) $A = 263.4^\circ$

30) $A = -375^\circ$

Identify the quadrant for the angle θ satisfying the following conditions.

23) $\tan \theta > 0$ and $\sin \theta < 0$

For the given value of s , decide in which quadrant an angle of s radians lies by evaluating $\sin s$ and $\cos s$.

31) $s = 33$

24) $\cot \theta < 0$ and $\cos \theta > 0$

32) $s = 54$

25) $\csc \theta > 0$ and $\sec \theta > 0$

Find the exact circular function value.

33) $\cos \frac{-2\pi}{3}$

26) $\cot \theta > 0$ and $\sin \theta < 0$

34) $\sin \frac{-7\pi}{4}$

Find the reference angle for the given angle.

27) $A = 57^\circ$

35) $\sin \frac{-2\pi}{3}$

42) $\sec 0.2864$

36) $\cos 2\pi$

43) $\tan 0.2068$

37) $\tan \frac{7\pi}{6}$

44) $\cot 0.2872$

38) $\csc \frac{5\pi}{3}$

Find the exact function value.

45) $\sin 1110^\circ$

39) $\cot \frac{-11\pi}{6}$

46) $\cos -1020^\circ$

40) $\cot \pi$

47) $\sin 1140^\circ$

Find the value of s in the interval $[0, \pi/2]$ that makes the statement true.

48) $\sin s = 0.35091392$

Use a table or a calculator to evaluate the function.

41) $\sin 0.1298$

$$49) \tan s = 0.65730225$$

$$56) \left[\pi, \frac{3\pi}{2} \right]; \sin s = -\frac{\sqrt{3}}{2}$$

$$50) \cos s = 0.90868542$$

$$57) \left[\frac{3\pi}{2}, 2\pi \right]; \tan s = -\frac{\sqrt{3}}{3}$$

$$51) \sec s = 4.1924229$$

$$52) \cot s = 3.31345018$$

$$53) \csc s = 1.67095580$$

Find the exact value of s in the given interval that has the given circular function value.

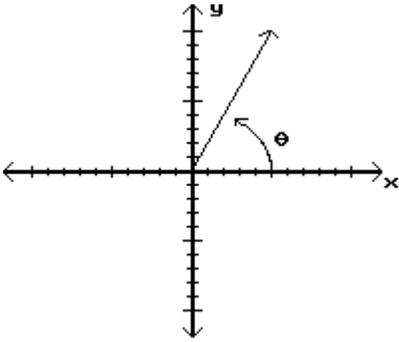
$$54) \left[\frac{\pi}{2}, \pi \right]; \sin s = \frac{\sqrt{2}}{2}$$

$$55) \left[\frac{\pi}{2}, \pi \right]; \cos s = -\frac{\sqrt{3}}{2}$$

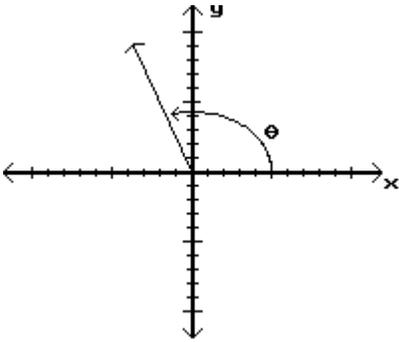
Answer Key

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1)



2)



3) $\frac{4}{5}$

4) $\frac{12}{13}$

5) $\frac{5}{4}$

6) Undefined

7) $-\frac{8}{3}$

8) Negative

9) Positive

10) Negative

11) $\frac{9\sqrt{82}}{82}$

12) $-\frac{5}{4}$

13) 1

14) 1

15) -3

16) 0

17) Undefined

18) 30°

19) 50°

20) 80°

21) 15°

22) Decreases

23) Quadrant III

24) Quadrant IV

25) Quadrant I

26) Quadrant III

27) 57°

28) 22°

29) 83.4°

30) 15°

31) II

32) III

33) $-\frac{1}{2}$

34) $\frac{\sqrt{2}}{2}$

35) $-\frac{\sqrt{3}}{2}$

36) 1

37) $\frac{\sqrt{3}}{3}$

38) $-\frac{2\sqrt{3}}{3}$

39) $\sqrt{3}$

40) Undefined

41) 0.1294

42) 1.042

43) 0.2098

44) 3.386

45) $\frac{1}{2}$

46) $\frac{1}{2}$

47) $\frac{\sqrt{3}}{2}$

48) 0.35854691

49) 0.5814915

50) 0.43067197

51) 1.32994903

52) 0.29310755

53) 0.64157734

54) $s = \frac{3\pi}{4}$

55) $s = \frac{5\pi}{6}$

56) $s = \frac{4\pi}{3}$

Answer Key

Testname: 5.3PRAC

$$57) s = \frac{11\pi}{6}$$