



Find the measure of two angles, one positive and one negative, that are coterminal with the given angle.

19.  $60^\circ$

20.  $30^\circ$

21.  $-45^\circ$

22.  $90^\circ$

23.  $\frac{\pi}{3}$

24.  $-\frac{\pi}{4}$

For the given angle, name the quadrant in which the terminal side lies.

25.  $85^\circ$

26.  $-125^\circ$

27.  $-740^\circ$

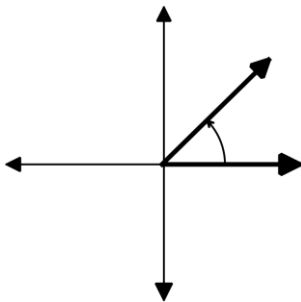
Find the smallest possible angle that has a positive measure and is coterminal with the given angle. (Answer should be between  $0^\circ$  and  $360^\circ$ .)

28.  $400^\circ$

29.  $-340^\circ$

Given the following choices, determine that degree and radian measure of the given angle.

30.



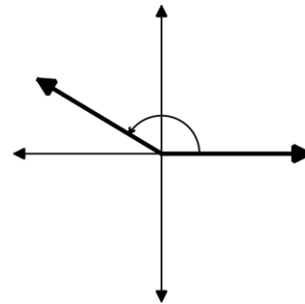
A)  $120^\circ, \frac{2\pi}{3}$

B)  $45^\circ, \frac{\pi}{4}$

C)  $60^\circ, \frac{\pi}{3}$

D)  $135^\circ, \frac{3\pi}{4}$

31.



A)  $120^\circ, \frac{2\pi}{3}$

B)  $30^\circ, \frac{\pi}{6}$

C)  $60^\circ, \frac{\pi}{3}$

D)  $150^\circ, \frac{5\pi}{6}$

Determine whether the angles in each pair are coterminal.

32.  $-42^\circ$  and  $308^\circ$

33.  $\frac{\pi}{4}$  and  $\frac{17\pi}{4}$

Find the arc length. If you are given radians, write the answer in terms of  $\pi$  (exact answer) and then use the  $\pi$  button to round answers to the nearest tenth. If you are given degrees, round the answer to the nearest tenth of a degree. Show work using the formula. Remember, leave work and answer in the units it begins with.

34.  $r = 2$  m,  $\theta = 60^\circ$

35.  $r = 4.5$  ft.,  $\theta = 135^\circ$

36.  $r = 7$  km,  $\theta = \frac{2\pi}{3}$

37.  $r = 20$  yd.,  $\theta = \frac{5\pi}{4}$

38.  $r = 4$  in.,  $\theta = 300^\circ$

39.  $r = 12$  mi.,  $\theta = \frac{\pi}{8}$

Use the arc length formula and the given information to find the indicated measure. Round answers to the nearest tenth if necessary. Show work using the formula. Remember, leave work and answer in the units it begins with.

40.  $r = 2$  in.,  $s = 50$ ; find  $\theta$  in (leave answer in degrees)

41.  $s = 1.5$  ft.,  $\theta = \frac{\pi}{4}$  rad; find  $r$

42.  $r = 1$  cm,  $s = 4$  cm; find  $\theta$  (leave answer in radians)

43.  $s = 2.5$  cm,  $\theta = 315^\circ$ ; find  $r$

44.  $s = 4$  in,  $r = 7$  in; find  $\theta$  (leave answer in radians)

45.  $s = 3$  m,  $\theta = \frac{5\pi}{6}$ ; find  $r$

Solve. Show all work, including restrictions if necessary.

46.  $\log(x-2) = 0$

47. Solve:  $2e^{x-1} = 6$

48. Graph  $f(x) = -\log_3(x-3) - 2$ . Identify the transformations, intercepts, asymptotes, domain and range. Use 3 key points.

Transformations:

Intercepts:

Asymptote:

Domain:

Range:

