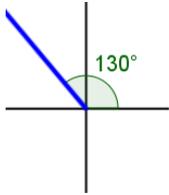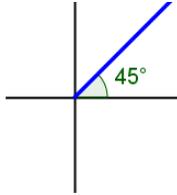# SM3 9.2: Angles & Radians

Draw each angle in standard form.

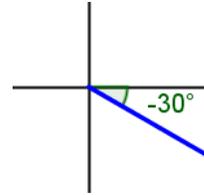1) 130°

2) 45°

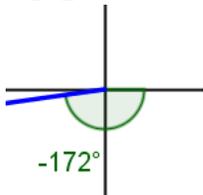
3) −30°

4) −172°

5) 200°
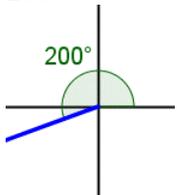
6) −300°
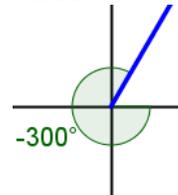
7) 720°
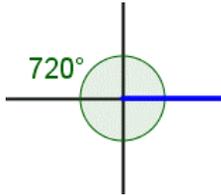
8) −570°
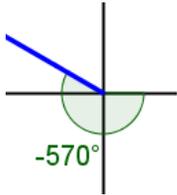
9) 765°
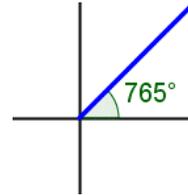
Determine the Quadrant in which the terminal side of each angle resides.

10) 172°
QII

11) −315°
QI

12) 718°
QIV

13) 415°
QI

14) −63°
QIV

15) 135°
QII

16) −700°
QI

17) 1020°
QIV

18) −284°
QI

Convert each degree measure to radians.

19) 120°
$\dfrac{2\pi}{3}$

20) 210°
$\dfrac{7\pi}{6}$

21) −60°
$-\dfrac{\pi}{3}$

22) 420°
$\dfrac{7\pi}{3}$

23) −110°
$-\dfrac{11\pi}{18}$

24) 330°
$\dfrac{11\pi}{6}$

25) $-45°$

$-\dfrac{\pi}{4}$

26) $150°$

$\dfrac{5\pi}{6}$

27) $300°$

$\dfrac{5\pi}{3}$

28) $-135°$

$-\dfrac{3\pi}{4}$

29) $450°$

$\dfrac{5\pi}{2}$

30) $-210°$

$-\dfrac{7\pi}{6}$

Convert each radian to degree measure.

31) $\dfrac{\pi}{6}$

$30°$

32) $\dfrac{5\pi}{3}$

$300°$

33) $-\dfrac{\pi}{2}$

$-90°$

34) $\dfrac{3\pi}{4}$

$135°$

35) $-\dfrac{\pi}{4}$

$-45°$

36) $-\dfrac{5\pi}{6}$

$-150°$

37) $\dfrac{7\pi}{6}$

$210°$

38) $-\dfrac{\pi}{6}$

$-30°$

39) 2.3

$131.8°$

40) $\dfrac{11\pi}{6}$

$330°$

41) -1.28

$-73.3°$

42) $-\dfrac{2\pi}{3}$

$-120°$

Draw each angle in standard form.

43) $-\dfrac{\pi}{2}$

44) $\dfrac{\pi}{6}$

45) $\dfrac{5\pi}{3}$

46) $\dfrac{7\pi}{6}$

7π/6

47) $\dfrac{7\pi}{4}$
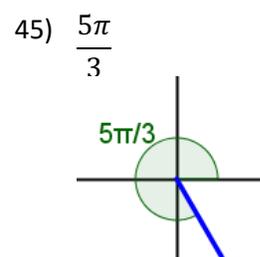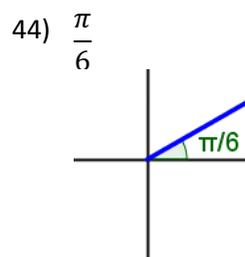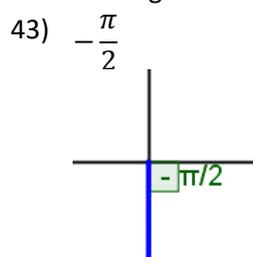

7π/4

48) $-\pi$

- π

49) $-\dfrac{10\pi}{3}$

-10π/3

50) $\dfrac{13\pi}{6}$

13π/6

51) 8π

8π
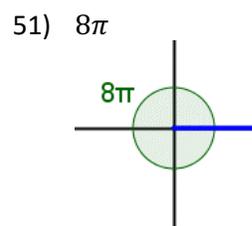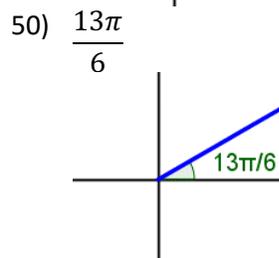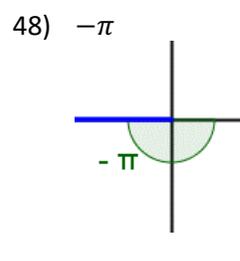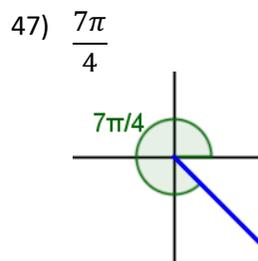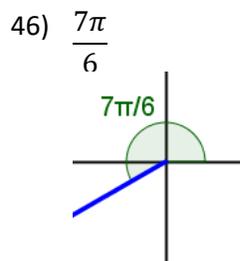
Determine the quadrant in which the terminal side of each angle resides.

52) $\dfrac{\pi}{6}$
QI

53) $\dfrac{5\pi}{3}$
QIV
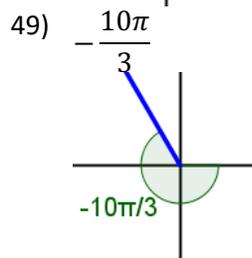
54) $-\dfrac{\pi}{2}$
on the negative y-axis

55) $\dfrac{3\pi}{4}$
QII

56) $-\dfrac{\pi}{4}$
QIV

57) $-\dfrac{5\pi}{6}$
QIII

58) $\dfrac{7\pi}{6}$
QIII

59) $-\dfrac{\pi}{6}$
QIV

60) $\dfrac{11\pi}{6}$
QIV

Find one positive and one negative coterminal angle for each of the following. There is no need to graph the angles.

61) $30°$
390°
−330°

62) $-40°$
320°
−400°

63) $150°$
510°
−210°

64) $220°$
580°
−140°

65) $-33°$
327°
−393°

66) $\dfrac{\pi}{3}$
$\dfrac{7\pi}{3}$
$-\dfrac{5\pi}{3}$

67) $\dfrac{5\pi}{2}$

$\dfrac{\pi}{2}$

$-\dfrac{3\pi}{2}$

68) $-\dfrac{2\pi}{3}$

$\dfrac{4\pi}{3}$

$-\dfrac{8\pi}{3}$

69) $-\dfrac{5\pi}{6}$

$\dfrac{7\pi}{6}$

$-\dfrac{17\pi}{6}$

70) $\dfrac{5\pi}{3}$

$\dfrac{11\pi}{3}$

$-\dfrac{\pi}{3}$

71) $-\dfrac{4\pi}{3}$

$\dfrac{2\pi}{3}$

$-\dfrac{10\pi}{3}$

72) $-410°$

$310°$

$-50°$

73) $700°$

$340°$

$-20°$

74) $-\dfrac{17\pi}{6}$

$\dfrac{7\pi}{6}$

$-\dfrac{5\pi}{6}$

75) $\dfrac{31\pi}{6}$

$\dfrac{7\pi}{6}$

$-\dfrac{5\pi}{6}$