Radian Measure

Given some information about a circle find the number of radians indicated by the indicated arc length. Draw a circle with the appropriate central angle for each problem.

1) r = 5 ft.
Arc = 10 ft.
Radians =

2) r = 8 in.
Arc= 40 in.
Radians =

3) r = 3 m
Arc = 12 m
Radians =

4) r = 6 yds.
Arc = 18 yds
Radians =

5) r = 6 in
Arc = 9 in
Radians =

6) r = 10 m
Arc = 35 m
Radians =

7) r = 4 ft
Arc = 5 ft
Radians =

8) r = 12 mm
Arc = 30 mm
Radians =

9) d = 6 mm
Arc = 6 mm
Radians =

10) d = 14 ft
Arc = 28 ft
Radians =

11) d = 10 yds
Arc = 15 yds
Radians =

12) d = 18 m
Arc = 45 m
Radians =

13) d = 12 m
Arc = 9 m
Radians =

14) d = 7 cm
Arc = 3.5 cm
Radians =

15) d = 16 mm
Arc = 6 mm
Radians =

16) d = 3 ft
Arc = 4.5 ft
Radians =

How many radius lengths are required to rotate once around the circle? Give answer in terms of pi and as a decimal.

17) 18) 19) 20)

What is the radian measure of one rotation around the circle?

21) 22) 23) 24)

How many radius lengths are required to rotate half way around the circle? Give answer in terms of pi and as a decimal.

25) 26) 27) 28)

What is the radian measure of one half of a rotation around the circle?

29) 30) 31) 32)

How many radius lengths are required to rotate 90^0 around the circle? Give answer in terms of pi and as a decimal.

33) 34) 35) 36)

What is the radian measure of one quarter of a rotation around the circle?

37) 38) 39) 40)

Given the degree measure of a rotation find the number of radius lengths to cover that arc and give the corresponding radian measure.

41) 360^0 42) 180^0 43) 360^0 44) 180^0

45) 30^0 46) 60^0 47) 45^0 48) 120^0

49) 60^0 50) 120^0 51) 90^0 52) 30^0

53) 90^0 54) 180^0 55) 135^0 56) 135^0

57) 120^0 58) 240^0 59) 180^0 60) 270^0

61) 240^0 62) 300^0 63) 225^0 64) 315^0

Convert each radian measure into degree measure.

65) $\pi/6$ 66) $\pi/3$ rad 67) $\pi/4$ rad 68) $5\pi/6$ rad

69) $7\pi/6$ rad 70) $4\pi/3$ rad 71) $3\pi/4$ rad 72) $8\pi/3$ rad

73) $11\pi/6$ rad 74) $5\pi/3$ rad 75) $7\pi/4$ rad 76) $5\pi/4$ rad

77) $17\pi/6$ rad 78) $13\pi/3$ rad 79) $19\pi4$ rad 80) $25\pi3$ rad