Answer on Question #58083 – Math – Geometry

Question

Find the radius and diameter of a circle with the following circumferences. If you need to, use 3 for π.

a) C = 30 inches
b) C = 37.5 inches
c) C = 50π cm
d) C = 26π cm
e) C = 18.6 ft

Solution

From a well-known formula for circumference of circle

$$C = 2\pi R = \pi D$$

where R = radius of circle, D = diameter,
we can get

$$D = \frac{C}{\pi}; R = \frac{C}{2\pi}$$

Next,

a)

$$D = \frac{C}{\pi} = \frac{30}{3} = 10\ inches; R = \frac{C}{2\pi} = \frac{30}{6} = 5\ inches$$

b)

$$D = \frac{C}{\pi} = \frac{37.5}{3} = 12.5\ inches; R = \frac{C}{2\pi} = \frac{37.5}{6} = 6.25\ inches$$

c)

$$D = \frac{C}{\pi} = \frac{50\pi}{\pi} = 50\ cm; R = \frac{C}{2\pi} = \frac{50\pi}{2\pi} = 25\ cm$$

d)

$$D = \frac{C}{\pi} = \frac{26\pi}{\pi} = 26\ cm; R = \frac{C}{2\pi} = \frac{26\pi}{2\pi} = 13\ cm$$

e)

$$D = \frac{C}{\pi} = \frac{18.6}{3} = 6.2\ ft; R = \frac{C}{2\pi} = \frac{18.6}{6} = 3.1\ ft$$