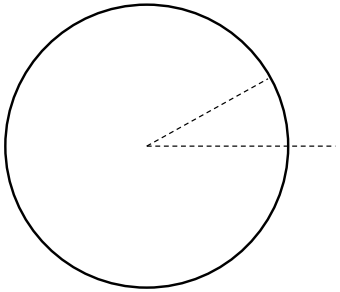
Problem 7.2

A wheel has a radius of 4.1 meters. How far does a point on the wheel travel if the wheel is rotated through:

a.) 30^{o}

b.) 30 radians

c.) 30 revolutions



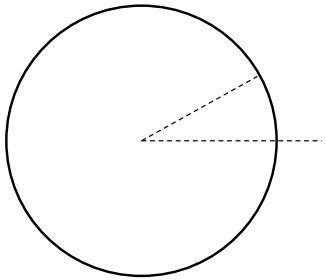
A wheel has a radius of 4.1 meters. How far does a point on the wheel travel if the wheel is rotated through:

a.) 30^{o}

$$\text{path length} = \frac{30^{o}}{360^{o}}(2\pi r)$$
$$= .0833\left[(2)(3.14)(4.1\text{ m})\right]$$
$$= 2.14 \text{ meters}$$

b.) 30 radians

$$\text{path length} = R(\Delta\theta)$$
$$= (4.1\text{ m})[30 \text{ radians}]$$
$$= 123 \text{ meters}$$



c.) 30 rev

$$\text{path length} = (30 \text{ rev})\left[(2\pi r) \text{ meters/rev}\right]$$
$$= 772.8 \text{ meters}$$