Chapter 6 Section 3 MA1032 Data, Functions & Graphs

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Why?

Definition

An angle of 1 radian is defined to be the angle, in the counter clockwise direction, at the center of a unit circle which spans an arc length of 1

Revolutions	Degrees	Radians
		$\frac{\pi}{8}$
$\frac{1}{6}$		
	15°	
		$\frac{5\pi}{6}$
$\frac{2}{3}$		-

Definition

The arc length, *s*, spanned in a circle of radius *r* by an angle of θ radians, $0 \le \theta \le 2\pi$, is given by $s = r\theta$.

A chicken is walking in a straight line on the (x, y)-plane, which is measured in feet (so for instance, the point (0,1) is 1 foot from the origin). The chicken starts at the point (-1,5) and walks along the line y = -3x + 2 at a constant speed. Five seconds later, the chicken's *y*-coordinate is 25. Express the distance from the chicken to the origin as the function of *t*, the number of seconds the chicken has been walking.

Angel and Bernard start running around a circular track. The track has radius 70 meters. They start at the same point, but run in opposite directions. Angel runs at 6 meters per second and Bernard runs at 4 meters per second.

After running for 15 minutes, how far are they (in a straight line) from each other?



- Radians
- Conversions
- Arc length