

Math 1613 - Trigonometry

Quiz #6 - 2010.10.05

Solutions

Remember that $\omega = \frac{\theta}{t}$ and $v = r\omega$.

1. Determine the *angular* speed (in radians per hour) of the tip of a minute hand of a clock that is 10cm long.

Here we use $\omega = \frac{\theta}{t}$:

$$\omega = \frac{\theta}{t} = \frac{2\pi \text{ radians}}{1 \text{ hour}}$$

2. Determine the *linear* speed (in cm per hour) of the tip of a minute hand of a clock that is 10cm long.

Here we use $v = r\omega$:

$$v = 10 \text{ cm} \frac{2\pi \text{ radians}}{1 \text{ hour}} = 20\pi \frac{\text{cm}}{\text{hour}}$$