

G11_Angular displacement & Angular velocity

A. Convert the following units.

1. $120^\circ \rightarrow$ radians
2. $135^\circ \rightarrow$ radians
3. $150^\circ \rightarrow$ radians
4. $1.2 \text{ radians} \rightarrow$ degree
5. $3.0 \text{ radians} \rightarrow$ degree
6. $\frac{2\pi}{3} \text{ radians} \rightarrow$ degree

B. Short answer.

1. A tire rotates at a constant 1.5 radians every 0.1 second. What is the tire angular velocity ? rad/s.

If the tire has diameter 80 cm, what is the linear speed velocity ?

cm/s

2. A mass of 1.5 kg moves in a circle of radius 25 cm at 2.0 Hz .
Calculate the angular velocity rad/s and linear
velocity m/s