\[ \Theta(t) = 2.0 + 4.0t^2 + 2.0t^3 \]

Angular velocity:
\[ \omega(t) = \frac{d\Theta}{dt} = 8.0t + 6.0t^2 \]

Angular acceleration:
\[ \alpha(t) = \frac{d\omega}{dt} = 8.0 + 12.0t \]

a) \( \Theta(t=0) = 2.0 \) radians
b) \( \omega(t=0) = 0 \) radians/second
c) \( \omega(t=4) = 8(4) + 6(4)^2 = 128 \) radians/second
d) \( \alpha(t=2) = 8.0 + 12.0(2) = 32 \) radians/second^2
e) No, its angular acceleration depends on time