9.22: a) \( \frac{1.25 \text{ m/s}}{25.0 \times 10^{-3} \text{ m}} = 50.0 \text{ rad/s} \), \( \frac{1.25 \text{ m}}{58.0 \times 10^{-3} \text{ m}} = 21.55 \text{ rad/s} \), or 21.6 rad/s to three figures.

b) \( (1.25 \text{ m/s })(74.0 \text{ min })(60 \text{ s/min}) = 5.55 \text{ km} \).

c) \( \alpha_z = \frac{50.0 \text{ rad/s} - 21.55 \text{ rad/s}}{(74.0 \text{ min })(60 \text{ s/min})} = 6.41 \times 10^{-3} \text{ rad/s}^2 \).