

An automobile travels to the right at a constant speed of 48 mi/h. If the diameter of a wheel is 22 in., determine the velocities of points B, C, D, and E on the rim of the wheel.

$$r = \frac{V_A}{\omega} = \frac{875 \text{ in/s}}{76.82 \text{ rad/s}}$$

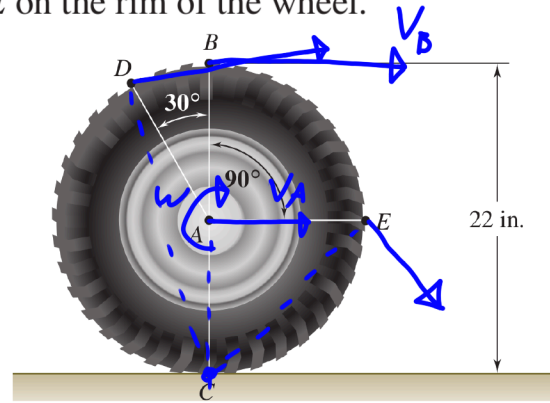
$$= 11 \text{ in}$$

point C

$$V_B = (BC)\omega = 22 \text{ in} \cdot 76.82 \text{ rad/s} \\ = 1690 \text{ in/s}$$

$$V_E = (CE)\omega \\ = 15.6 \text{ in} \cdot 76.82 \text{ rad/s} \\ = 1195 \text{ in/s}$$

$$V_D = (CD)\omega \\ = 21.25 \cdot 76.82 \text{ rad/s} \\ = 1632 \text{ in/s}$$



$$V_A = 875 \text{ in/s} \\ \omega = 76.82 \text{ rad/s}$$

$$CE = \sqrt{11^2 + 11^2} = 15.6 \text{ in}$$

$$CD = \sqrt{(11 \sin 30^\circ)^2 + (11 + 11 \cos 30^\circ)^2} \\ = 21.25 \text{ in}$$