

6. Using Faraday's law, the induced emf is

$$\begin{aligned}\varepsilon &= -\frac{d\Phi_B}{dt} = -\frac{d(BA)}{dt} = -B \frac{dA}{dt} = -B \frac{d(\pi r^2)}{dt} = -2\pi r B \frac{dr}{dt} \\ &= -2\pi(0.12\text{m})(0.800\text{T})(-0.750\text{m/s}) \\ &= 0.452\text{V}.\end{aligned}$$