

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

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