Name:_____

Find $\frac{dV}{V}$ given $V = \frac{4}{3}\pi r^3$ and $\frac{dr}{r} = 0.07$

$$\frac{dV}{dr} = 4\pi r^2$$

$$dV = 4\pi r^2 dr$$

$$\frac{dV}{V} = \frac{4\pi r^2 dr}{\left(\frac{4}{3}\pi r^3\right)} \cdot \frac{3}{3}$$

$$= \frac{12\pi r^2 dr}{4\pi r^3}$$

$$= \frac{3dr}{r}$$

$$= 3\left(\frac{dr}{r}\right)$$

$$= 0.21$$