

Name: _____

You buy a \$12,000 car and pay it off over 7 years with monthly payments. The interest rate is 6%, compounded monthly.

a) Find the payment amount using one of the formulas below:

$$PMT = FV \cdot \frac{i}{(1+i)^n - 1}$$

$$PMT = PV \cdot \frac{i}{1 - (1+i)^{-n}}$$

$$PV = 12,000 \quad t = 7 \quad m = 12 \quad r = 0.06$$
$$i = \frac{r}{m} = 0.005 \quad n = mt = 84$$

$$PMT = PV \cdot \frac{i}{1 - (1+i)^{-n}}$$
$$= \frac{12,000 (0.005)}{(1 - 1.005^{-84})}$$
$$\approx \$175.30$$

b) Find the total interest paid

$$\text{Total payments} - PV$$
$$= 84 (175.30) - 12,000$$
$$= \$2,725.20$$