Jane borrowed $9500 at an interest rate of 6.9% compounded monthly for 3 years. What is the regular payment?

$PV = \$9500$

$i = \frac{0.069}{12} = 0.00575$

$n = 12$

$t = 3$

$R = \frac{PV\,i}{1-(1+i)^{-nt}}$

$= \frac{9500 \times 0.00575}{1-(1+0.00575)^{-12\times 3}}$

$= \frac{54.625}{1-(0.8135)}$

$= \frac{54.625}{1-(1.00575)^{-36}}$

$= \frac{54.625}{0.1864} = 292.895$

$R = \$292.90$

The bank will extend a loan to John at 4% interest compounded monthly over 7 years. John has $5000 for a down payment for the Audi 6 he would like to buy. The sales tax is 13% and the list price of the car is $41, 998.
How much are his regular payments?

$$\text{Total Cost of car} = (41{,}998)(0.13) + 41{,}998$$

$$= 5459.74 + 41{,}998$$

$$= 47{,}457.74$$

$$PV = 47{,}457.74 - 5000 = \$42{,}457.74$$

$$i = \frac{r}{n} = \frac{0.04}{12} = 0.00333$$

$$n = 12$$

$$t = 7$$

$$R = \frac{PVi}{1-(1+i)^{-nt}}$$

$$= \frac{(42{,}457.74)(0.00333)}{1-(1+0.00333)^{-(12)(7)}}$$

$$= \frac{141.3842}{1-(1.00333)^{-84}}$$

$$= \frac{141.3842}{1-0.7563}$$

$$= \frac{141.3842}{0.2437}$$

$$R = \$580.1667$$

$$R = \$580.16$$