Mortgage Payment

$$M = P\frac{i(1+i)^n}{(1+i)^n - 1}$$

$M = monthly\ payment$

$P = principal\ of\ the\ loan$

$i = interest\ rate^*$

$n = number\ of\ payments$

*Convert the annual interest rate to a monthly rate

Example:

$P = 100{,}000$

$i = 0.00416667$

$n = 180$

$(1+i)^n = 2.1137$

$$M = P\frac{i(1+i)^n}{(1+i)^n - 1}$$

$$= 100{,}000 \times \frac{0.00416667 \times 2.1137}{2.1137 - 1}$$

$$= 100{,}000 \times \frac{0.008807}{1.1137}$$

$$= 100{,}000 \times 0.0079079$$

$$= \$790.79$$