

Algebra 2 CC
Exponential Applications HW

Name _____

1.) Using the formula below, determine the monthly payment on a 5-year car loan with a monthly percentage rate of 0.525% for a car with an original cost of \$18,000 and a \$2000 down payment, **to the nearest cent**.

$$P_n = PMT \left(\frac{1 - (1 + i)^{-n}}{i} \right)$$

P_n = present amount borrowed

n = number of monthly pay periods

PMT = monthly payment

i = interest rate per month

b. An affordable monthly payment for your budget is \$250, over the same time period. Determine an appropriate down payment, **to the nearest dollar**.

2.) Monthly mortgage payments can be found using the formula:
$$M = \frac{P\left(\frac{r}{12}\right)\left(1 + \frac{r}{12}\right)^n}{\left(1 + \frac{r}{12}\right)^n - 1}$$

M = monthly payment , P = amount borrowed

r = annual interest rate , n = number of **monthly** payments

The Banks family would like to borrow \$120,000 to purchase a home.

They qualify for an annual interest rate of 5%. What is the monthly payment over a **10-year** period?

[Round to the nearest cent]