MCU414

Exponential Functions Worksheet

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer each question in the space provided. Be sure to show all work and calculations, especially the **rule** of the function.

1. A used car is valued at $15 000. Every year the value of the car depreciates by 20% with respect to its value the previous year. How much will the car be worth in 3 years? In 6 years?

In 3 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in 6 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $1000 is invested for 5 years at a 6% annual compound interest rate. At the end of the term, how much money would you have? How much would you have if the interest rate was 5.5%

At 6% \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at 5.5% \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Each year the frog population in a small wooded area declines by 5% in contrast to the previous year. If this wooded area now has 2000 frogs, how many frogs will be present in 10 years? In 15 years?

 In 10 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in 15 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A person invests $5400 in a guaranteed investment certificate with an annual interest rate of 3.6%. What will be the value of this investment after 10 years if no withdraws are made?

 In 10 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A bacteria culture starts with 2000 bacteria and is doubling every 2 hours. How many bacteria will there be in
2. 4 hours b) 9 hours c) 1 day d) 5 days
3. \_\_\_\_\_\_\_\_\_\_ b) \_\_\_\_\_\_\_\_\_\_\_\_\_ c) \_\_\_\_\_\_\_\_\_\_\_\_ d) \_\_\_\_\_\_\_\_\_\_\_\_\_
4. A couple is looking to invest $25 000 and has 2 different options. Plan A offers 6% interest compounded annually. Plan B offers 3% interest compounded every 6 months. If the couple invests for 5 years, how much more would they make if they chose the more profitable plan?

They would make \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ more with Plan \_\_\_\_\_ .