

Unit 6: Introduction to Exponential Functions

PRACTICE · SET 2

Name: _____ Date: _____

Show your work and give each answer as a single exact value (number, fraction, or coordinate pair).

1. Evaluate the exponential function $f(x) = 3 \cdot 2^x$ at $x = 4$. What is $f(4)$?

Answer: _____

3. For the function $g(x) = 5 \cdot 4^x$, what is the value of $g(0)$?

Answer: _____

5. Evaluate the decay function $f(x) = 80 \cdot (1/2)^x$ at $x = 3$. What is $f(3)$?

Answer: _____

7. In the exponential function $y = a \cdot b^x$, the growth factor for a function that increases by 25% each period is b . What is b written as a decimal?

Answer: _____

9. The function $f(x) = 6 \cdot 2^x$ has what y -intercept? Give the answer as a coordinate pair (x, y) .

Answer: _____

2. A population starts at 200 and triples each year. Write the value of P after 2 years using $P = 200 \cdot 3^t$. What is P when $t = 2$?

Answer: _____

4. A bacteria colony doubles every hour. It starts with 50 bacteria. Using $N = 50 \cdot 2^t$, how many bacteria are there after 3 hours?

Answer: _____

6. A car worth \$20000 loses value by a factor of 0.9 each year. Using $V = 20000 \cdot 0.9^t$, what is V after 1 year?

Answer: _____

8. A quantity decreases by 30% each year. What is the decay factor b used in $y = a \cdot b^x$, written as a decimal?

Answer: _____

10. A savings account has \$1000 and grows by a factor of 1.1 each year. Using $A = 1000 \cdot 1.1^t$, what is A after 2 years?

Answer: _____

11. Evaluate $h(x) = 2 \cdot 5^x$ at $x = 3$. What is $h(3)$?

Answer: _____

12. A medicine amount of 100 mg is halved every 4 hours. Using $M = 100 \cdot (1/2)^n$ where n is the number of 4-hour periods, how many mg remain after 8 hours ($n = 2$)?

Answer: _____