

Algebra I – Unit 6: Topic 1 – Integer Exponents

Practice – Integer Exponents

Name _____ Date _____ Period _____

Simplify the expressions below.

1. 4^{-2}

2. $(-5)^{-2}$

3. $\frac{1}{2^0}$

4. $\left(\frac{1}{4}\right)^2$

5. -5^2

6. $\frac{4}{2^{-3}}$

Simplified expressions are shown below. Fill in the box with the value that makes each equation true.

7. $4n^{\square} = \frac{4}{n^2}$

8. $\frac{a^{\square}}{3b^{\square}} = \frac{ab^3}{3}$



In the lab, the population of a certain bacteria doubles every month. A study uses the expression $3000 \cdot 2^m$ to model a population of 3000 bacteria after m months of growth.

9. What is the population of bacteria at the beginning of the study when $m=0$?

10. What is the population of bacteria at $m=-2$? What does this value represent?

Evaluate each expression for $x=-3$ and $y=5$.

11. $3y^{-2}$

12. $(4x)^{-2}$

13. $\frac{1}{x^{-3}y^2}$

14. x^0y^{-3}

Simplify each expression.

15. $a^{-5}b^{-7}$

16. a^1c^0

17. $\frac{7ab^{-2}}{3w}$

18. $\frac{15s}{5t^{-3}}$