6 Chapter Test

Check It Out
Test Practice
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Simplify the expression.

1. $\sqrt{98}$
2. $\sqrt{\frac{19}{25}}$
3. $\frac{6 - \sqrt{48}}{2}$

Simplify. Write your answer using only positive exponents.

4. $z^{-2} \cdot z^{4}$
5. $\frac{b^{-5}}{b^{-8}}$
6. $\left(\frac{2c^{4}}{5}\right)^{-3}$

Simplify the expression.

7. $\sqrt[4]{16}$
8. $729^{1/6}$
9. $32^{7/5}$

10. Graph $y = 7^{x} + 1$. Describe the domain and range. Compare the graph to the graph of $y = 7^{x}$.

Write an exponential function represented by the table.

11.

x	0	1	2	3
y	−1	−2	−4	−8

12.

x	0	1	2	3
y	3	−12	48	−192

Solve the equation. Check your solution, if possible.

13. $2^{x} = 128$
14. $256^{x+2} = 16^{3x-1}$

Write and graph a function that represents the situation.

15. Your $42,500 annual salary increases by 3% each year.
16. You deposit $500 in an account that earns 6.5% annual interest compounded yearly.

Determine whether the table represents an *exponential growth function*, an *exponential decay function*, or *neither*.

17.

x	0	1	2	3
y	15	30	60	120

18.

x	0	1	2	3
y	400	100	25	6.25

19. **TRAINING** You follow the training schedule from your coach.

    a. Write an equation for the nth term of the geometric sequence.

    b. Write a recursive rule for the explicit equation in part (a).

    c. On what day do you run approximately 3 kilometers?