6.1-6.2 Review

In Exercises 1–4, evaluate the expression. No decimal answers!

1. \(3^{-2}\)

2. \(-4^0\)

3. \((-4)^{-3}\)

4. \(\frac{2^{-2}}{-4^0}\)

In Exercises 5–10, simplify the expression. Write your answer using only positive exponents.

5. \(x^{-2}\)

6. \(4x^{-5}y^0\)

7. \((-5)^{-2} \cdot (-5)^6\)

8. \(\frac{7^{-1}x^{-3}y^5}{2^3}\)

9. \(\frac{4^7}{4^4}\)

10. \((t^{-5})^4\)
In Exercises 11–14, simplify the expression. Write your answer using only positive exponents.

11. \((-5x)^3\)  

12. \((k^3)^{-2}\)

13. \(\left(\frac{5x^0}{10x^{-3}y^2}\right)^2\)

14. \(\left(\frac{-6a^{-9}b^5}{2a^7b^{-4}}\right)^4\)

In Exercises 15 and 16, rewrite the expression in rational exponent form.

15. \(\sqrt[4]{81}\)

16. \(\left(\frac{4}{110}\right)^7\)

In Exercises 17 and 18, rewrite the expression in radical form.

17. \((-34)^{4/9}\)

18. \(4^{7/4}\)

In Exercises 19 and 20, find the indicated real \(n\)th root(s) of \(a\).

19. \(n = 4, \ a = 81\)

20. \(n = 3, \ a = 125\)
In Exercises 21 and 22, find the length of the side of the cube.

21. Volume = 216 ft³
22. Volume = 64 ft³

In Exercises 23–24, evaluate the expression.

23. \( \sqrt[4]{-625} \)
24. \( \sqrt[3]{64} \)

In Exercises 25 and 26, rewrite the expression in rational exponent form.

25. \( \left( \frac{1}{2} \right)^{-53} \)
26. \( \left( \frac{1}{2} \right)^{110} \)

In Exercises 27 and 28, rewrite the expression in radical form.

27. \( (-34)^{4/9} \)
28. \( 41^{7/4} \)

In Exercises 29 and 30, evaluate the expression.

29. \( 25^{3/2} \)
30. \( (-25)^{5/2} \)

31. The area of a square patio is 36 ft². Find the length of one side of the patio.