

Answers

- 1.** ± 10
2. ± 0.7
3. $6|x|$
4. $0.2x^2y$
5. $5x^2y^4\sqrt{2}$
6. $2mn^2\sqrt[4]{2m^3n}$
7. $72x^2|y|$
8. $3\sqrt[3]{3}$
9. $2x^5\sqrt{x}$
10. $\frac{2}{|x|}$
11. $2x^2y$
12. $14\sqrt[3]{3}$
13. $7 + 4\sqrt{3}$
14. $5\sqrt{3}$
15. $24 + 6\sqrt{7}$
16. $\frac{\sqrt{6xy}}{6x^2}$
17. $-17^{\frac{1}{2}}$
18. $y^{\frac{8}{3}}$
19. $\sqrt[7]{m^3}$
20. $\frac{\sqrt[3]{y^2}}{y^2}$
21. 9
22. 8
23. $4\sqrt[3]{2x}$
24. $26|x|\sqrt{2}$
25. $2x^2$
26. cannot be simplified
27. $y + \sqrt{3y} - 6$
28. $\frac{1}{65,536 xy^3}$
29. $\frac{x^3}{y^6}$
30. $\frac{1}{x^6}$
31. 13 in.
32. There are no real roots of $\sqrt{-16}$; there is no real number a such that $a^2 = -16$.
33. error in multiplication of the denominators:

$$\frac{\sqrt[3]{x}}{\sqrt[3]{y}} \cdot \frac{\sqrt[3]{y}}{\sqrt[3]{x}} = \frac{\sqrt[3]{xy}}{\sqrt[3]{y^2}} = \sqrt[3]{\frac{x}{y}}$$

34. $0^{-\frac{2}{3}} = \frac{1}{0}$, which is undefined.
35. The product of two integers will always be an integer, and the product $\sqrt{y} \cdot \sqrt{y} = y$, an integer. The other terms will cancel out and the difference of two integers is an integer.
36. $(-8)^{\frac{1}{2}} = \sqrt{-8}$, which is not a real number, but $(-8)^{\frac{1}{2}} = -\sqrt{8}$, which is a real number; $(-27)^{\frac{1}{3}} = \sqrt[3]{-27} = -3$, and $-\sqrt[3]{27} = -(3) = -3$