

Review
Standard 1A-1B

Simplify

1. $3x^{\frac{1}{3}} \cdot x^0$
 $3x^{\frac{1}{3}}$

2. $m \cdot 2m^2 \cdot 3m^{\frac{3}{2}}$
 $6m^{\frac{9}{2}}$

3. $4x^{\frac{1}{2}}y^{\frac{3}{4}}z^{\frac{1}{3}} \cdot 6x^{\frac{1}{2}}y^{\frac{1}{2}}z^{\frac{1}{3}}$
 $24xy^{\frac{5}{4}}z^{\frac{2}{3}}$

4. $(3x^{\frac{3}{4}})^4$
 $81x^3$

5. $2\left(x^{\frac{1}{2}}\right)^4$
 $2x^2$

6. $\left(\frac{8x}{27y}\right)^{\frac{1}{3}}$
 $\frac{2x^{\frac{1}{3}}}{3y^{\frac{1}{3}}}$

7. $\frac{2x^{\frac{3}{5}}y^{\frac{1}{2}}}{12x^{\frac{2}{5}}y^{\frac{3}{2}}}$
 $\frac{x}{6y^2}$

8. $\left(\frac{16x^4y^{\frac{1}{4}}z^{\frac{1}{6}}}{25x^3y^{\frac{3}{4}}z^{\frac{1}{3}}}\right)^{\frac{1}{2}}$
 $\frac{5z^{\frac{1}{4}}}{4x^{\frac{1}{2}}y^{\frac{1}{2}}}$

9. $\sqrt{48}$
 $4\sqrt{3}$

10. $\sqrt{128}$
 $8\sqrt{2}$

11. $3\sqrt{25x^3y^2}$
 $15x^2y\sqrt{x}$

12. $4\sqrt[3]{54x^3yz^4}$
 $12xz\sqrt{2x^2yz}$

13. $\frac{8+\sqrt{48}}{4}$
 $2+\sqrt{3}$

14. $\frac{12+\sqrt{18}}{6} < \frac{9}{2} < \left(\frac{3}{3}\right)$
 $\frac{12+3\sqrt{2}}{6}$
 $\left[\frac{4+\sqrt{2}}{2} \text{ or } 2+\frac{\sqrt{2}}{2}\right]$

Write the radical in rational-exponent form and the rational exponent in radical form.

15. $\sqrt[3]{7^3}$
 $7^{3/3}$

16. $(\sqrt[3]{5})^7$
 $5^{7/3}$

17. $\sqrt[3]{2a^2b^3}$
 $2^{1/3} a^{2/3} b^{3/3}$

18. $2^{3/2}$
 $\sqrt[3]{2^2}$

19. $5x^{1/4}$
 $5\sqrt[4]{x}$

20. $(3x)^{5/6}$
 $\sqrt[6]{(3x)^5}$
 or
 $\sqrt[6]{3^5 x^5}$

2.1 Adding and Subtracting Polynomials

Simplify. Write the polynomial in standard form. Then name each polynomial based on its degree and number of terms.

21. $-2x^3 - 5x^2 + x^4 + 2x^3 - 2x^5$
 $-2x^5 + x^4 - 5x^2$
 5th degree
 trinomial (# terms)

22. $(2x^3 - 5x^2 + 4) + (3x^3 - 2x^2)$
 $5x^3 - 7x^2 + 4$
 cubic (degree)
 trinomial

23. $(4r + r - 6) + (-2r + r)$

$4r - 6$
 linear
 binomial

24. $(5m^2 - m - 6) - (-m + 3m^2)$
 $+m - 3m^2$

$2m^2 - 6$
 quadratic
 binomial

25. $(x^2 - 4x - x^4) - (x - 3x^2 + 9)$
 $-x + 3x^2 - 9$

$-x^4 + 4x^2 - 5x - 9$
 4th degree
 polynomial

26. $(r^3 + 2r^2 - 6r) + (3r^3 - r^2 + 7)$

$4r^3 + r^2 - 6r + 7$
 cubic
 polynomial

27. $(y^2 + 3y + 2) - (3y - 2)$
 $-3y + 2$

$y^2 + 4$
 quadratic
 binomial

28. $(5x^4 + x^2 - 3x) - (5x^4 + x^2 - 2x)$
 $-5x^4 - x^2 + 2x$

$-x$
 linear
 monomial