

Problem	Solution
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Simplify. Keep Exponents Positive.

1.  $(-3x^4y^5)^3$

2.  $(-6x^2y^5)(3xy^3)$

3.  $\left(\frac{4x^2}{y}\right)^{-3}$

4.  $(x+1)^3$

5.  $2^{m+n} * 2^{m-n}$

6.  $\left(\frac{-7a^2b^3c^0}{2a^0b^2c^7}\right)^{-2}$

7.  $\frac{(-x^3)(-y^4)(-z)^4}{(-x)^2(-y)^3(-z^4)}$

8.  $-3x^2y^2(2x^4y - 3x^2y^{-2} + 4x^{-2}y^3)$

9.  $5x^{1-2n} * 3x^{4n}$

10.  $\frac{5x^{1-2n}}{3x^{4n}}$

11.  $y^2z^p * 3y^{2n-2} * z^{n-p}$

12.  $(x^{n-1} - x^n) \div x^n$

13.  $(x^{x+2} + y^{x-1})(x^{x-2} - y^{-1})$

14.  $(x^{2n+3}y^{n+3} - 2x^{2n+1}y^{n+1}) \div (-x^{2n}y^n)$

15.  $\left[ x^3 \left( \frac{\frac{1}{x^2}}{\sqrt[8]{x}} \right)^{\frac{5}{2}} \right]^{\frac{8}{22}}$

16.  $(xyz)^{x+y+z} \div (x^{y+z}y^{x+z}z^{x+y})$

17.  $\sqrt[n]{x^{2n+1}}$

18.  $2^n(2^{n-1})^n \div (2^{n+1} \cdot 2^{n-1})$

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$$19. \left( \frac{x^{m+n}}{x^n} \right)^m \div \left( \frac{x^n}{x^{m+n}} \right)^{n-m}$$

$$20. \frac{x^{2n} + 2x^n + 1}{x^{2n} - 1}$$

$$21. (x^{-4} - 7x^{-2} - 30) \div (x^{-2} + 3)$$

$$22. \sqrt{x^{-2} - 2x^{-1}y + y^2}$$

$$23. (125x^9y^6)^{\frac{1}{3}}$$

$$24. (125x^9y^6)^{\frac{1}{2}}$$

$$25. \frac{\left( 3y^{\frac{1}{4}} \right)^3}{y^{\frac{1}{12}}}$$

$$26. \frac{\sqrt[3]{a^{21}b^{88}c^{92}}}{\sqrt[4]{a^{19}b^{21}c^{18}}}$$

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

$$28. (e^x + e^{-x})^2 - 2$$

$$29. \left( 3x - 10x^{\frac{1}{2}} + 3 \right) \div \left( 3x^{\frac{1}{2}} - 1 \right)$$

$$30. \sqrt{xy^2 - y^2z} \div \sqrt{x-z}$$

$$31. \left( \sqrt{x^x} - \sqrt{y} \right)^2$$

$$32. \frac{x^{\frac{1}{2}} + y^{\frac{1}{2}}}{\sqrt{x} + \sqrt{y}} \left( x^{\frac{1}{2}} y^{-\frac{1}{2}} \right)^3$$

$$33. -x^2(9-x^2)^{\frac{1}{2}} + \sqrt{9-x^2} + \frac{3}{\sqrt{1-\left(\frac{x}{3}\right)^2}}$$

Follow the directions.

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34.  $\left(\sqrt[3]{x^4} - 2 + x^{-\frac{4}{3}}\right)\left(\sqrt[3]{x^2} - x^{-\frac{2}{3}}\right)$

35.  $(x^2 - 4)(x^2 + 3)^{\frac{1}{2}} - (x^2 - 4)^2(x^2 + 3)^{\frac{3}{2}}$