

Montessori Math Workshop Problems

November 14, 2025

Solve, simplify as much as possible:

1. $(-2m^4n^6)^2$

2. $[(-4)^2]^3$

3. $[(-5xy)^2]^5$

4. $[(5+x)^3]^6$

5. $(-ab)(a^2b)^2$

6. $\left(\frac{2x^2y}{3x}\right) \cdot \left(\frac{9xy^2}{y^4}\right)$

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

8. $\frac{3^3}{3^{-4}}$

9. $x^3 \cdot \frac{1}{x^2}$

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

11. $\left(\frac{16x^3y}{-4xy^3}\right) \cdot \left(\frac{2xy}{-x^{-1}}\right)$

12. $\left(\frac{5x^{-3}y^2}{x^5y^{-1}}\right) \cdot \left(\frac{(2xy^3)^{-2}}{xy}\right)$

13. $\frac{(r^3)^4}{(r^3)^8}$

14. $\frac{x^4}{x^5}$

15. $\left(\frac{-6x^2y}{2xy^3}\right)^3$

Graph:

16. $y = 2^x$

17. $y = \left(\frac{1}{3}\right)^x$

18. $y = 4^{-x}$

Rewrite as a decimal number:

19. $6.43 \times 10^4 =$

20. $3.072 \times 10^6 =$

21. $4.2 \times 10^{-2} =$

22. $1.52 \times 10^{-3} =$

23. $2.834 \times 10^2 =$

24. $4.9 \times 10^5 =$

25. $7.8 \times 10^{-1} =$

26. $1.23 \times 10^{-6} =$

Rewrite in Scientific Notation:

27. 34.690

28. 1.78

29. 0.039

30. 0.000722

31. 5,600,000,000

32. $(1.4 \times 10^4) \cdot (7.6 \times 10^3) =$

33. $(1.2 \times 10^{-1}) \div (4.8 \times 10^{-4}) =$

34. $(4.0 \times 10^{-2})^3 =$

35. $(2.0 \times 10^6) + (3.0 \times 10^6) =$