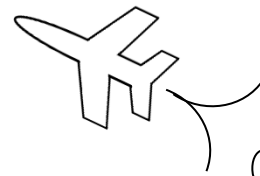




# MAth on the Fly!



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

## Rules of Exponents

Simplify each expression below.  
Write your final answer using positive exponents.

1.  $x^5 \cdot x^7 \cdot x$

2.  $(x^{-6})(x^{10})(x^{-4})$

3.  $x^2y^9 \cdot x^7y^5$

4.  $x^6x^3 \cdot (x^6)^3$

5.  $(4x^5y)(9x^3y^4)$

6.  $(x^{-4})^3 \cdot (x^{-9})^{-2}$

7.  $(x^9y^8z^7)^0$

8.  $\frac{x^6y^4z^8}{x^6yz^3}$

9.  $(2x^2yz^9)^5$

10.  $\frac{x^4y^9x^7y^9}{y^2x^5y^6x^{10}}$

11.  $\left(\frac{7x^4}{6y^7}\right)^2$

12.  $\frac{u^{-1}v^{-2}w^4}{x^3y^9z^{-5}}$

13.  $\frac{x^2}{x^7}$

14.  $\left(\frac{2xy^4}{x^2y^7}\right)^3$

15.  $\frac{x^{-2}}{x^{-7}}$

16.  $\frac{x^{-7}}{x^2}$

17.  $\frac{x^7}{x^{-2}}$

18.  $\frac{x^{-7}}{x^{-2}}$

## SOLUTIONS

$$1. \quad x^{13}$$

$$2. \quad 1$$

$$3. \quad x^9y^{14}$$

$$4. \quad x^{27}$$

$$5. \quad 36x^8y^5$$

$$6. \quad x^6$$

$$7. \quad 1$$

$$8. \quad y^3z^5$$

$$9. \quad 32x^{10}y^5z^{45}$$

$$10. \quad \frac{y^{10}}{x^4}$$

$$11. \quad \frac{49x^8}{36y^{14}}$$

$$12. \quad \frac{w^4z^5}{uv^2x^3y^9}$$

$$13. \quad \frac{1}{x^5}$$

$$14. \quad \frac{8}{x^3y^9}$$

$$15. \quad x^5$$

$$16. \quad \frac{1}{x^9}$$

$$17. \quad x^9$$

$$18. \quad \frac{1}{x^5}$$