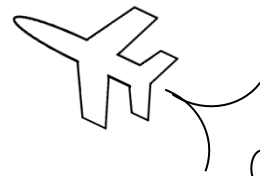


MAth on the Fly!



NAME: _____ DATE: _____

Fractional Exponents and Radicals

Simplify each expression below.

1. $49^{1/2}$

2. $8^{5/3}$

3. $36^{-3/2}$

4. $27^{-2/3}$

Write each expression using a single exponent.

5. $\sqrt[7]{x}$

6. $\sqrt[3]{x^2}$

7. $\sqrt[4]{x} \cdot x$

8. $\sqrt[6]{x^5} \cdot \sqrt{x}$

9. $\sqrt{\sqrt[5]{x^3}}$

10. $\sqrt[3]{\sqrt[4]{x}} \cdot \sqrt[6]{x^2}$

11. $x^3 \cdot \sqrt[7]{x^4}$

Write each expression in radical form under a single root.
Simplify the root, if possible.

12. $x^{8/9}$

13. $x^{9/8}$

14. $x^{3/4}x$

15. $x^{5/2}x^2x^{2/5}$

16. $x \cdot x^{1/2} \cdot x^{1/3} \cdot x^{1/4}$

SOLUTIONS

$$1. \quad 7$$

$$2. \quad 32$$

$$3. \quad \frac{1}{216}$$

$$4. \quad \frac{1}{9}$$

$$5. \quad x^{1/7}$$

$$6. \quad x^{2/3}$$

$$7. \quad x^{5/4}$$

$$8. \quad x^{4/3}$$

$$9. \quad x^{3/10}$$

$$10. \quad x^{5/12}$$

$$11. \quad x^{25/7}$$

$$12. \quad \sqrt[9]{x^8}$$

$$13. \quad \sqrt[8]{x^9} = x\sqrt[8]{x}$$

$$14. \quad \sqrt[4]{x^7} = x\sqrt[4]{x^3}$$

$$15. \quad \sqrt[10]{x^{49}} = x^4\sqrt[10]{x^9}$$

$$16. \quad \sqrt[12]{x^{25}} = x^2\sqrt[12]{x}$$