

Math Sheet

Name _____ Score _____ / 12 Teacher _____ Date _____

Mixed Exponent Operations

Use the indicated exponent law and write positive exponents.

1. $8^2 \cdot 8^{-2}$

2.
$$\frac{\left(\frac{5}{9}\right)^{-4}}{\left(\frac{5}{9}\right)^3}$$

3. $\left(6 \cdot y^6 \cdot z^{-1}\right)^5$
Domain: real variables $z \neq 0$

4.
$$\left(\frac{3 \cdot x^{-4}}{5 \cdot z^2}\right)^4$$

Domain: real variables $x \neq 0$ $z \neq 0$

5. $\left(\frac{3}{7}\right)^2 \cdot \left(\frac{3}{7}\right)^{-1}$

6.
$$\frac{x^{-1}}{x^5}$$

Domain: real variables $x \in \mathbb{R}$ $x \neq 0$

7. 3^5

8.
$$\left(\frac{4 \cdot x^{-3}}{9 \cdot z^4}\right)^2$$

Domain: real variables $x \neq 0$ $z \neq 0$

9. $y^4 \cdot y^{-2}$
Domain: real variables $y \in \mathbb{R}$ $y \neq 0$

10.
$$\frac{4^{-4}}{4}$$

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Mixed Exponent Operations

Use the indicated exponent law and write positive exponents.

11. $(9 \cdot y^5)^5$

12. $\left(\frac{3 \cdot x^{-1}}{3 \cdot z} \right)^3$

Domain: real variables $x \neq 0$ $z \neq 0$

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Mixed Exponent Operations

Answer Key

Use the indicated exponent law and write positive exponents.

1. $8^2 \cdot 8^{-2}$

Work:
 1

2.
$$\frac{\left(\frac{5}{9}\right)^{-4}}{\left(\frac{5}{9}\right)^3}$$

Work:
$$\frac{1}{\left(\frac{5}{9}\right)^7}$$

3. $\left(6 \cdot y^6 \cdot z^{-1}\right)^5$
Domain: real variables $z \neq 0$

Work:
$$\frac{7776 \cdot y^{30}}{z^5}$$

4. $\left(\frac{3 \cdot x^{-4}}{5 \cdot z^2}\right)^4$
Domain: real variables $x \neq 0$ $z \neq 0$

Work:
$$\frac{81}{625 \cdot x^{16} \cdot z^8}$$

5. $\left(\frac{3}{7}\right)^2 \cdot \left(\frac{3}{7}\right)^{-1}$

Work:
$$\frac{3}{7}$$

6. $\frac{x^{-1}}{x^5}$
Domain: real variables $x \in \mathbb{R}$ $x \neq 0$

Work:
$$\frac{1}{x^6}$$

7. 3^5
Work:
 243

8. $\left(\frac{4 \cdot x^{-3}}{9 \cdot z^4}\right)^2$
Domain: real variables $x \neq 0$ $z \neq 0$

Work:
$$\frac{16}{81 \cdot x^6 \cdot z^8}$$

9. $y^4 \cdot y^{-2}$
Domain: real variables $y \in \mathbb{R}$ $y \neq 0$

Work:
 y^2

10. $\frac{4^{-4}}{4}$
Work:
$$\frac{1}{4^5}$$

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Mixed Exponent Operations

Answer Key

Use the indicated exponent law and write positive exponents.

11. $(9 \cdot y^5)^5$

Work:

$$59049 \cdot y^{25}$$

12. $\left(\frac{3 \cdot x^{-1}}{3 \cdot z} \right)^3$

Domain: real variables $x \neq 0$ $z \neq 0$

Work:

$$\frac{1}{x^3 \cdot z^3}$$