Math Practice - Grade 8

M2 Exponents, roots, scientific notation - Simplify with exponent rules

M2 8.EE.A.1, 8.EE.A.2, 8.EE.A.3, 8.EE.A.4

Name: _____ Date: _____

Simplify the expression. Write the answer in the box.

Example: Simplify $4^2 / 4^1$.

How: When you multiply powers with the same base, add the exponents. When you divide, subtract them. A power of a power multiplies the exponents. A negative exponent means one over the power.

$4^2 / 4^1 =$ 4^1

1 **Simplify $3^1 / 3^{-2}$.**

$3^1 / 3^{-2} =$ ☐

2 **Simplify $(2^2)^{-3}$.**

$(2^2)^{-3} =$ ☐

3 **Simplify $4^0 / 4^{-2}$.**

$4^0 / 4^{-2} =$ ☐

4 **Simplify $(2^3)^3$.**

$(2^3)^3 =$ ☐

5 **Simplify $5^1 \times 5^{-2}$.**

$5^1 \times 5^{-2} =$ ☐

6 **Simplify $3^3 \times 3^2$.**

$3^3 \times 3^2 =$ ☐

7 **Simplify 2^{-1}.**

$2^{-1} =$ ☐

8 **Simplify 2^{-2}.**

$2^{-2} =$ ☐

9 **Simplify $(3^3)^{-2}$.**

$(3^3)^{-2} =$ ☐

10 **Simplify 3^{-1}.**

$3^{-1} =$ ☐

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Simplify the expression. Write the answer in the box.

Example: Simplify $(2^1)^{-3}$.

How: When you multiply powers with the same base, add the exponents. When you divide, subtract them. A power of a power multiplies the exponents. A negative exponent means one over the power.

$(2^1)^{-3} =$ 1/8

1 **Simplify $4^0 \times 4^2$.**

$4^0 \times 4^2 =$ ☐

2 **Simplify 2^{-2}.**

$2^{-2} =$ ☐

3 **Simplify $5^2 / 5^3$.**

$5^2 / 5^3 =$ ☐

4 **Simplify $(3^3)^{-3}$.**

$(3^3)^{-3} =$ ☐

5 **Simplify $2^3 \times 2^2$.**

$2^3 \times 2^2 =$ ☐

6 **Simplify 3^{-3}.**

$3^{-3} =$ ☐

7 **Simplify $(3^3)^{-2}$.**

$(3^3)^{-2} =$ ☐

8 **Simplify $3^{-3} \times 3^{-3}$.**

$3^{-3} \times 3^{-3} =$ ☐

9 **Simplify 5^{-1}.**

$5^{-1} =$ ☐

10 **Simplify 5^{-3}.**

$5^{-3} =$ ☐

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Name: _____ Date: _____

Simplify the expression. Write the answer in the box.

Example: Simplify $5^0 \times 5^{-1}$.

How: When you multiply powers with the same base, add the exponents. When you divide, subtract them. A power of a power multiplies the exponents. A negative exponent means one over the power.

$5^0 \times 5^{-1} =$ 1/5

1 **Simplify $5^1 / 5^3$.**

$5^1 / 5^3 =$ ☐

2 **Simplify $(2^1)^{-2}$.**

$(2^1)^{-2} =$ ☐

3 **Simplify $3^2 \times 3^0$.**

$3^2 \times 3^0 =$ ☐

4 **Simplify $(4^2)^3$.**

$(4^2)^3 =$ ☐

5 **Simplify $(5^3)^2$.**

$(5^3)^2 =$ ☐

6 **Simplify $3^{-1} / 3^0$.**

$3^{-1} / 3^0 =$ ☐

7 **Simplify $5^{-3} \times 5^3$.**

$5^{-3} \times 5^3 =$ ☐

8 **Simplify $4^3 / 4^0$.**

$4^3 / 4^0 =$ ☐

9 **Simplify $(5^2)^3$.**

$(5^2)^3 =$ ☐

10 **Simplify $(2^3)^{-3}$.**

$(2^3)^{-3} =$ ☐