

# M9 - 3.4 - Negative Exponents HW

Write with positive exponents

$$2^{-3} = \left(\frac{1}{2^3}\right)$$

$$2^{-3} = 0.125 = \frac{1}{2^3} \quad \checkmark$$

Check Answer

$$3^{-4} =$$

$$6^{-2} =$$

$$5^{-2} =$$

$$9^{-2} =$$

$$3^{-3} =$$

$$\frac{1}{2^{-3}} =$$

$$\frac{1}{7^{-2}} =$$

$$\frac{1}{4^{-1}} =$$

$$\frac{1}{3^{-4}} =$$

$$\frac{1}{8^{-5}} =$$

$$\frac{1}{6^{-9}} =$$

$$2x^{-2} =$$

$$\frac{1}{2x^{-2}} =$$

$$2^{-3}x =$$

$$\frac{1}{2^{-3}x} =$$

$$2^{-3}x^{-2} =$$

$$\frac{1}{2^{-3}x^{-2}} =$$

$$\frac{5}{2y^{-3}} =$$

$$\frac{x^2}{y^{-3}} =$$

$$\frac{5}{3^{-2}y^{-3}} =$$

$$\frac{x^{-2}}{y^{-3}} =$$

$$\frac{4}{(2x)^{-2}} =$$

$$\frac{a^{-2}}{(2y)^{-4}} =$$

Write with negative exponents

$$2^3 =$$

$$\frac{1}{2^3} =$$

$$\frac{1}{2x^3} =$$

$$\frac{2}{x^3} =$$

# M9 - 3.4 - Negative Exponents HW

**Write with Negative exponents**

$$\frac{6^2}{6^4} =$$

$$\frac{9^2}{9^3} =$$

$$5^4 \div 5^5 =$$

$$\frac{7}{7^2} =$$

$$\frac{7}{7^2} =$$

$$2^2 \div 2^5 =$$

**Write with Positive exponents**

$$\frac{6^2}{6^4} =$$

$$\frac{9^2}{9^3} =$$

$$5^4 \div 5^5 =$$

$$\frac{7}{7^2} =$$

$$\frac{7}{7^2} =$$

$$2^2 \div 2^5 =$$

**Write with Positive exponents**

$$\left(\frac{2}{3}\right)^{-2} =$$

$$\left(\frac{5}{7}\right)^{-4} =$$

$$\left(\frac{1}{2}\right)^{-3} =$$

**Write with Positive exponents**

$$\frac{5^{-3}}{5^2} =$$

$$\frac{6^2}{6^{-1}} =$$

$$8^3 \div 8^{-4} =$$

$$\frac{9^{-4}}{9^{-3}} =$$

$$\frac{4}{4^2} =$$

$$7^{-2} \div 7^{-5} =$$

**Write with Positive exponents**

$$\frac{2x^{-2}}{y^{-4}} =$$

$$\frac{5x^2}{y^{-4}} =$$

$$\frac{5x^{-2}}{2y^4} =$$

$$\frac{4a^{-3}}{b^{-4}} =$$

$$\frac{a^{-2}}{5b^{-5}} =$$

$$\frac{(6a)^{-2}}{b^5} =$$

# M9 - 3.4 - Change of Base Negative Exponents HW

Change to positive exponents with lowest base.

$$8^{-2} = \frac{1}{8^2} = \frac{1}{(2^3)^2} = \frac{1}{2^6}$$

Write with Positive Exponents

Change of Base

Multiply Exponents

OR

$$8^{-2} = (2^3)^{-2} = 2^{-6} = \frac{1}{2^6}$$

Change of Base

Multiply Exponents

Write with Positive Exponents

$$8^{-2} = 0.015625 = \frac{1}{2^6} \quad \checkmark \quad \text{Check Answer}$$

Change to negative exponents with lowest base.

$$\frac{1}{2} = \frac{1}{2^1} = 2^{-1}$$

Change of Base  
Multiply Exponents

Write with Positive Exponents

Negative Laws

$$\frac{1}{2^1} = 2^{-1}$$

$$\frac{1}{81} = \frac{1}{3^4}$$

Change of Base

Negative Laws

Multiply Exponents

Write with Positive Exponents

$$\frac{1}{9} = \frac{1}{3^2} = 3^{-2}$$

$$\left(\frac{1}{25}\right)^2 = \left(\frac{1}{5^2}\right)^2 = (5^{-2})^2 = 5^{-4}$$

Change of Base  
Negative Laws  
Multiply Exponents

OR

$$\left(\frac{1}{25}\right)^2 = \frac{1^2}{25^2} = \frac{1}{(5^2)^2} = \frac{1}{5^4} = 5^{-4}$$

Multiply Exponents

Change of Base  
Multiply Exponents Again  
Negative Laws

Change to positive exponents with lowest base.

$27^{-2} =$

$25^{-2} =$

$64^{-1} =$

$16^{-3} =$

$4^{-3} =$

$243^{-2} =$

Change to negative exponents with lowest base.

$\left(\frac{1}{9}\right)^3 =$

$\left(\frac{1}{2}\right)^{-4} =$

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