

1.6

Multiply + Divide Exponents

DIVISION

$$\frac{7^6}{7^3} = 7^{6-3} = 7^3$$

$$* \left\{ \frac{7^6}{7^{-3}} = 7^{6-(-3)} = 7^{6+3} = 7^9 \right.$$

$$\frac{7^{-3}}{7^2} = 7^{-3-2} = 7^{-5} = \frac{1}{7^5}$$

$$\frac{w^{-1}}{w^{-5}} = w^{-1-(-5)} = w^{-1+5} = w^4$$

$$\frac{4^{-2}}{4^{-6}} = 4^{-2-(-6)} = 4^{-2+6} = 4^4$$

$$\frac{3^7}{3^{-1}} = 3^{7-(-1)} = 3^{7+1} = 3^8$$

$$\frac{3^{-7}}{3^{-2}} = 3^{-7-(-2)} = 3^{-7+2} = 3^{-5} = \frac{1}{3^5}$$

MULTIPLICATION

$$5^3 \cdot 5^4 = 5^{12}$$

$$5^3 \cdot 5^{-4} = 5^{3+(-4)} = 5^{-1} = \frac{1}{5}$$

$$4^6 \cdot 4^{-3} = 4^{6+(-3)} = 4^3 = 4 \cdot 4 \cdot 4$$

$$4^{-5} \cdot 4^{-3} = 4^{-5+(-3)} = 4^{-8} = \frac{1}{4^8}$$

$$6^5 \cdot 6^{-8} = 6^{-3} = \frac{1}{6^3}$$

$$7^3 \cdot 7^{-4} = 7^{-1} = \frac{1}{7}$$

Practice

$$\frac{x^5}{x^{-2}} = x^{5-(-2)} = x^7$$

$$\frac{5^3}{5^5} = 5^{3-5} = 5^{-2} = \frac{1}{5^2}$$

$$\frac{c^{-5}}{c^{-7}} = c^{-5-(-7)} = c^{-5+7} = c^2$$