

2.3 Order of Operations with Powers

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We can use the word BEDMAS to help us remember the order of operations

B Brackets

E Exponents

D Division

M Multiplication

A Addition

S Subtraction

Do in order from
left to right

Ex #1

$$\begin{aligned} \text{(a)} \quad & 2^3 + 1 \\ & = 8 + 1 \\ & = \boxed{9} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & 8 - 3^2 \\ & = 8 - 9 \\ & = \boxed{-1} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & (3-1)^3 \\ & = (2)^3 \\ & = \boxed{8} \end{aligned}$$

Ex #2

$$\begin{aligned} \text{(a)} \quad & [2 \times (-2)^3]^2 \\ & = [2 \times (-8)]^2 \\ & = [-16]^2 \\ & = \boxed{256} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & (7^2 + 5^0) - (-5)^1 \\ & = (49 + 1) \div (-5)^1 \\ & = (50) \div (-5)^1 \\ & = 50 \div -5 \\ & = \frac{50}{-5} = \boxed{-10} \end{aligned}$$

Ex #3

$$\begin{aligned} & 120 + \underline{20^3} \div \underline{10^3} + 12 \times 120 \\ &= 120 + \underline{8000 - 1000} + \underline{12 \times 120} \\ &= 120 + 8 + 1440 \\ &= \boxed{1568} \end{aligned}$$

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