

Chapter 2 Review

Learning Goal 2.3

I can evaluate an expression using order of operations with powers and applying exponent laws.

1. The following equations are true. Show each step, using order of operations how the answer is achieved.

Developing			
a.	$4^3 - 2^3 = 56$	b.	$(4 - 2)^3 = 8$
c.	$(6^2 \times 7) \div 2^1 = 126$	d.	$48 \div 3 \times 2^2 = 64$
e.	$5 \times (2^3 - 2^4) = -40$	f.	$5 \times 2^3 - 2^4 = 24$
Proficient			
g.	$4^3 \div (8 \times (6^1 - 2^3)) = -4$	h.	$(4^3 \div 8) \times (6^1 - 2^3) = -16$
i.	$(2 \times 3) + 3^2 - 5 \times 3 = 0$	j.	$\frac{5^3 \times (2^3 - 4^2)}{5^2} = -40$
k.	$(10 - 7)^4 + 2 \times 3^2 = 99$	l.	$\frac{2^3(3^2 - 5)}{4^2} = 2$
Extending			
m.	$(10 - 2^3)^5 + 4 \times (5 - 24) + (21 - 5^2)^2 = -28$	n.	$\left(\left(\frac{3^3}{3^4} \right)^{-1} + \left(\frac{5 \times 9^1}{3^2} \right) \right) \times 2^{-2} = 2$
o.	$\left(\frac{5}{10} \right)^{-3} - 2 \times 5^2 \times 10^{-1} = 3$	p.	$6^2 \div (9 + (-2)^3) - 2(8 - (-2)^2)^3 = -92$

$$\begin{aligned}
 e. \quad & 5 \times (2^3 - 2^4) \\
 & = 5 \times (8 - 2^4) \\
 & = 5 \times (8 - 16) \\
 & = 5 \times (-8) \\
 & = -40
 \end{aligned}$$

$$\begin{aligned}
 j. \quad & \frac{5^3 \times (2^3 - 4^2)}{5^2} \\
 & = \frac{5^3 \times (8 - 4^2)}{5^2} \\
 & = \frac{5^3 \times (8 - 16)}{5^2} \\
 & = \frac{5^3 \times (-8)}{5^2} \\
 & = 5^{3-2} \times (-8)
 \end{aligned}$$

$$\begin{aligned}
 i. \quad & (2 \times 3) + 3^2 - 5 \times 3 \\
 & = 6 + 3^2 - 5 \times 3 \\
 & = 6 + 9 - 5 \times 3 \\
 & = 6 + 9 - 15 \\
 & = 15 - 15 \\
 & = 0
 \end{aligned}$$

$$= 5 \times (-8) \\ = -40$$

$$\begin{aligned} \text{n. } & \left(\left(\frac{3^3}{3^4} \right)^{-1} + \left(\frac{5 \times 9^1}{3^2} \right) \right) \times 2^{-2} \\ & = \left(\left(\frac{1}{3^{4-3}} \right)^{-1} + \left(\frac{5 \times 9^1}{3^2} \right) \right) \times 2^{-2} \\ & = \left(\left(\frac{1}{3} \right)^{-1} + \left(\frac{5 \times 9^1}{3^2} \right) \right) \times 2^{-2} \\ & = \left(3 + \left(\frac{5 \times 9^1}{3^2} \right) \right) \times 2^{-2} \\ & = \left(3 + \left(\frac{5 \times 9}{9} \right) \right) \times 2^{-2} \\ & = (3 + 5) \times 2^{-2} \\ & = 8 \times 2^{-2} \\ & = 8 \times \frac{1}{2^2} \\ & = 8 \times \frac{1}{4} \\ & = 2 \end{aligned}$$

