

C: Order of Operations Continued**Working with BEDMAS****Examples:**

1. Which of the following has the greater value? How much greater is it?

a. $4(3)^3$ $3(4)^2$

$$\begin{aligned} 4(3)^3 \\ = 4(27) \\ = 108 \end{aligned}$$

$$\begin{aligned} 3(4)^2 \\ = 3(16) \\ = 48 \end{aligned}$$

$$108 - 48 = 60$$

$4(3)^3$ is greater than $3(4)^2$ by 60.

b. $7^3 + 7^3$

$(7 + 7)^3$

$$\begin{aligned} 7^3 + 7^3 \\ = 343 + 343 \\ = 686 \end{aligned}$$

$$\begin{aligned} (7 + 7)^3 \\ = (14)^3 \\ = 2744 \end{aligned}$$

$$2744 - 686 = 2058$$

$(7 + 7)^3$ is greater than $7^3 + 7^3$ by 2058.

2. Determine the solution for:

$$64 \div (-4)^3 + 5(2)^2$$

$$64 \div (-64) + 5(4)$$

$$(-1) + 5(4)$$

$$(-1) + 20$$

$$19$$

BEDMAS (Nothing to do in brackets so exponents)

Division next $64 \div (-64)$

Multiplication next $5(4)$

Addition

No Subtraction!

3. There are six volleyball teams. Each volleyball team has 6 players, every player has 6 pairs of socks, every pair of socks has 6 coloured stripes.

a. How many players in total are there?

6 teams each team has 6 players so:

$$6 \text{ teams} \times 6 \text{ players}$$

$$= 6^2$$

$$= 36 \text{ players in total}$$

b. How many coloured stripes are there?

6 teams each team has 6 players each player has 6 pairs of socks every pair of socks has 6 stripes so:

$$6 \text{ teams} \times 6 \text{ players} \times 6 \text{ pairs of socks} \times 6 \text{ stripes}$$

$$= 6^4$$

$$= 1296 \text{ stripes}$$

c. Write an expression using powers of six to determine the total number of teams, players, pairs of socks, and coloured stripes. Evaluate the expression.

$$\text{teams} = 6^1$$

$$\text{players} = 6^2$$

$$\text{pairs of socks} = 6^3$$

$$\text{coloured stripes} = 6^4$$

$$\begin{aligned} \text{Total} &= 6^1 + 6^2 + 6^3 + 6^4 \\ &= 6 + 36 + 216 + 1296 \\ &= 1554 \end{aligned}$$

4. A blue square with a side length of 10 cm is placed on a pink square with a side length of 12 cm. Write an expression with powers to determine the visible yellow area. What is the visible yellow area?



$$\begin{aligned} A_{\text{pink}} &= s^2 \\ &= 12^2 \end{aligned}$$

$$\begin{aligned} A_{\text{blue}} &= s^2 \\ &= 10^2 \end{aligned}$$

$$\begin{aligned} A_{\text{visiblepink}} &= 12^2 - 10^2 \\ &= 144 - 100 \\ &= 44 \text{ cm}^2 \end{aligned}$$

Assignment Page 112 # 10 - 18