

Lesson 6: Order of Operations

Brackets

Exponents

Division

Multiplication

Addition

Subtraction

} in the order
they appear

} in the order
they appear

Examples: Evaluate. Show each step

$$1) (6 + (-2))^2 (3)$$

$$= (6 - 2)^2 (3)$$

$$= (4)^2 (3)$$

$$= 16 (3)$$

$$= 48$$

$$2) -6^2 + 5(4) \div 2 + (-6)^2$$

$$= -36 + 5(4) \div 2 + 36$$

$$= -36 + 10 + 36$$

$$= 10$$

* Note: $-6^2 \neq (-6)^2$
 $-6(6) \neq (-6)(-6)$
 $-36 \neq 36$

Lesson 10: Order of Operations

$$3) \frac{2(153-100)}{7^2+4}$$

$$= \frac{2(53)}{49+4}$$

$$= \frac{106}{53}$$

$$= 2$$

Multiplication } in the order they appear
 Division }
 Addition } in the order they appear
 Subtraction }

Exercises: Evaluate Show each step

$$1) (2+3) + 4 \div 2 + (2)^2$$

$$= 5 + 2 + 4 \div 2 + 4$$

$$= 5 + 2 + 2 + 4$$

$$= 13$$

$$2) (2+3)^2 \div (2)$$

$$= 5^2 \div 2$$

$$= 25 \div 2$$

$$= 12.5$$

$$= 12.5$$

$$\begin{aligned}
 & \times \text{Note: } -2 + (-2)^2 \\
 & = 2(2) + (-2)(-2) \\
 & = 4 + 4
 \end{aligned}$$

4) POWERS & ROOTS

Ex. Evaluate

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

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

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

$$= \frac{9}{4}$$

$$= \frac{4}{9}$$

$$d) \sqrt{\frac{16}{25}} = \frac{4}{5}$$

