

ASSIGNMENT #6: ORDER OF OPERATIONS

ORDER OF OPERATIONS

The **order of operations** are the steps every mathematician uses to solve problems that have more than one mathematical operation.

GROUPS/PARENTHESES → EXPONENTS → MULTIPLICATION/DIVISION → ADDITION/SUBTRACTION

Once a problem is simplified to multiplication/division or addition/subtraction, operations are worked from
LEFT TO RIGHT

EXAMPLE:

$$\begin{aligned} 440 \div 4(13 - 6 + 2^2) + 3 \\ = 440 \div 4(11) + 3 \\ = 110 \times 10 + 3 \\ = 1213 \end{aligned}$$

Parentheses and Exponents

$$(13 - 6 + 2^2) = (13 - 6 + 4) = (7 + 4) = 11$$

Multiplication/Division (Left to right!)

$$440 \div 4(11) = 110(11) = 1210$$

Addition/Subtraction (Left to right!)

$$1210 + 3 = 1213$$

MILD: EXPONENTS AND INTEGERS ONLY

If you need a refresher on how to do order of operations, check out the resources linked on the assignment website.

1. $5 + 3^3 \cdot 6$
2. $300 + (11 \cdot 1)^2$
3. $6 + 2(9 - 5) \div (-2)$
4. $10 + (-1)^3 \cdot 3 - 4(12 + 7)$
5. $(56 \div 7) \cdot 5 - 18 \div 2$
6. $-12 \cdot 8 + 4^2 \cdot (63 \div 7) - 3$
7. $-2^5 + 3 - 4(8)$
8. $(-5) + (-5 \cdot -5 - (-6)) - 3$

MEDIUM: EXPONENTS, FRACTIONS, AND DECIMALS

9. $\frac{4^2 + (59 - 3^3)}{-16}$
10. $1 + (-3\frac{1}{5}) + (-3.1) + 7$
11. $(\frac{36}{2^2}) \cdot 3 + 10 \cdot 0.5$
12. $(2.4)^2 \div (\frac{1}{3}) + 5.6$

$$13. 1.25 \cdot (0.4)^2 + 3.5 \div 7$$

$$14. 7^2 - 5 + \frac{10}{2} - 100$$

$$15. \frac{3(5.7-2.7) \cdot 3}{5^2+2}$$

$$16. [3(1.5)]^2 + \frac{3}{5}$$

$$17. \left(\frac{120}{5}\right)^0 + 1200 \div 10$$

 SPICY: ALL KINDS OF OPERATIONS AND VALUES!

$$18. |24 - 40| - [(8 + 6) \cdot 4]^2$$

$$19. \frac{\sqrt{64}}{8} + 5(9) \div 2 \cdot 13$$

$$20. \left(\frac{1}{2}\right)^{-1} - 4 \cdot 2 \div 16$$

$$21. 20 \div 4 \cdot \frac{2}{5} - (-|-7|)$$

$$22. |-2.5^2 + 15 \div 5(2 - 1)|$$

$$23. 1.5 \div 4 + 0.045 - 1(2)$$

$$24. (54 \div 9)^3 + (-4)(5)$$

$$25. 19 + 2^{-2} \cdot 13 - 6^2$$

ANSWER KEY

1: 167	2: 421	3: 2	4: -69	5: 31
6: 45	7: - 61	8: 23	9: -3	10: 1.7
11: 32	12: 22.88	13: 0.7	14: - 51	15: 1
16: 20.85	17: 121	18: - 3120	19: 293.5	20: 1.5
21: 9	22: 3.25	23: - 1.58	24: 196	25: - 13.75