

USING ORDER OF OPERATIONS

* Remember the order:

- Parenthesis first
- Exponents second
- Multiplication and Division third (left to right)
- Addition and Subtraction last (left to right)

Model Problems:

Evaluate:

1. $15 - 24(5 - 2) \div 2^3$



$$15 - 24 \times 3 \div 2^3$$

Parenthesis



$$15 - 24 \times 3 \div 8$$

Exponents



$$15 - 72 \div 8$$

Multiplication



$$15 - 9$$

Division



$$6$$

Subtraction

2. $\frac{(11+1)}{(1+2)} - (5-3) + 5$



$$\frac{12}{3} - 2 + 5$$

Parenthesis



$$4 - 2 + 5$$

Division



$$2 + 5$$

Subtraction



$$7$$

Addition

3. $\frac{3}{8} + \left(\frac{1}{2} - \frac{2}{5}\right) \div \left(\frac{2}{3}\right)^2$



$$\frac{3}{8} + \left(\frac{1}{10}\right) \div \left(\frac{2}{3}\right)^2$$

Parenthesis



$$\frac{3}{8} + \frac{1}{10} \div \frac{4}{9}$$

Exponents



$$\frac{3}{8} + \frac{9}{40}$$

Division



$$\frac{15+9}{40}$$

Addition



$$\frac{24}{40} = \frac{3}{5}$$

Reduce

Practice Exercises:

Evaluate (reduce, if necessary):

1. $12 + 15 \div (5 - 2) - 2$

2. $14 - 2^2 - (4 - 7)$

3. $14 - 2[8 - (3 - 2)]$

4. $7 + \frac{(17 - 5)}{(2^2 + 2)} - 3$

5. $24 \div \frac{3^2}{10 - 7} - (-3)$

6. $\frac{16 \times 2 \div (10 - 2) + 1}{25 - 2 \times 10}$

7. $16 - 3(8 - 3)^2 \div 5$

8. $\left(\frac{1}{2}\right)^2 - \left(\frac{3}{4} - \frac{1}{2}\right)$

9. $0.3(4.8 - 1.7) + (0.2)^2$

10. $0.51 - 5(0.2 - 0.1)^2$

11. $17 + 8^2 \times 2$

12. $3^2 - 2 + (16 \div 8)$

13. $45 + 7 \times (8 - 6)^4$

14. $8^2 \div 8(2) - 5$

15. $4^2 - 8 \times 2 \div 4$

16. $3 \cdot 4(6 - 1) - 20$

17. $3^2 - 3(5 - 3) \div 2$

18. $24 \div 6(-2) - (-2)^2$

19. $10 - 3(1 - 5)^2 \div (4 - 5)$

20. $25 - (-45) \div (2 - 5)^2 + 1^3$

Answers:

1. 15

2. 13

3. 0

4. 6

5. 11

6. 1

7. 1

8. 0

9. 0.97

10. 0.46

11. 145

12. 9

13. 157

14. 11

15. 12

16. 40

17. 6

18. -12

19. 58

20. 31