

Evaluate the expression.

1. $a + 5.7$ when $a = 1.3$

2. b^3 when $b = 4$

3. The number of weeks it takes you to read a novel is given by $\frac{n}{p}$, where n is total pages in the novel and p is pages read per week. How long will it take you to read a 340-page novel if you read 85 pages per week?

LEARNING GOAL:**Use the order of operations to evaluate expressions.****Vocabulary**

The **order of operations** was established to evaluate an expression involving more than one operation.

Order of Operations (P.E.M.D.A.S.)**STEP 1 Evaluate** expressions inside grouping symbols.**STEP 2 Evaluate** powers.**STEP 3 Multiply** and **divide** from left to right.**STEP 4 Add** and **subtract** from left to right.**EXAMPLE 1****Evaluate expressions**

Evaluate the expression $4^2 \cdot 5 - 6^2$.**Exercises for Example 1**

Evaluate the expression.

1. $20 - 3^2 + 2$	2. $5 \cdot 2^3 \div 6$	3. $4 \cdot 6 - 21 \div 3$
4. $20 - 4^2$	5. $2 \cdot 3^2 + 4$	6. $32 \div 2^3 + 6$
7. $15 + 6^2 - 4$	8. $27 \div 3^2 + 6$	9. $6 + 12 \div 3 \times 4^2$

EXAMPLE 2**Evaluate expressions with grouping symbols**

Evaluate the expression.

a. $47 - 2(9 + 12)$

b. $6[2^3 + (13 - 8)]$

Exercises for Example 2

Evaluate the expression.

10. $3(14 - 5)$	11. $6(9 - 1^4)$	12. $(7 + 5) - (8 + 4)$
13. $(3^3 - 6) \div 3$	14. $4^2(2 + 8)$	15. $9[15 \div (2 + 3)]$
16. $24 \div (4 - 1)$	17. $48 - (6 + 5^2)$	18. $3[32 \div (2 + 6)]$

EXAMPLE 3**Evaluate an algebraic expression**

Evaluate the expression $\frac{4y+8}{2+y}$ when $y = 3$.

Exercises for Example 3

Evaluate the expression when $w = 9$.

19. $17 - 3w$	20. $w^2 - 13$	21. $\frac{5w}{w+6}$
22. $7(13 - w)$	23. $2w^2 - 15$	24. $5w - \frac{1}{3}w$
25. $\frac{10x}{2(x+2)}$ when $x=3$	26. $12 - y - 1$ when $y=8$	27. $\frac{10y+1}{y+1}$ $y=8$

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1.2 Practice B**Algebra 1****Evaluate the expression**

1. $16 \div 8 \cdot 5$	2. $7^2 - 24 \div 3$	3. $5 + 1.2 \div 0.3$
4. $18 \div 6 + 4 \cdot 3$	5. $13 - 15 \div 5 + 9$	6. $\frac{2}{3} \cdot 3^2 - 5$
7. $8(6 - 2) + 4$	8. $28 - 3(4 + 5)$	9. $1.2 \cdot 5 - 6 \div 3$
10. $(11 + 15) \div 13$	11. $35 - 3^2 \cdot 2$	12. $\frac{4}{5} (3 \cdot 20) - 17$

Evaluate the expression.

13. $3x^4 - 5$ when $x = 5$	14. $8m^3 \div 6$ when $m = 3$	15. $200 - 3y^2$ when $y = 8$
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1.2 Practice B**Algebra 1**

16. $5c^2 - 2c$ when $c = 9$	17. $3 \cdot 18t^2$ when $t = \frac{1}{3}$	18. $\frac{42}{n} + n$ when $n = 6$
19. $7(x + 5)$ when $x = 10$	20. $\frac{5a}{a-6}$ when $a = 8$	21. $\frac{4d^2}{d+1} +$ when $d = 3$

22. Was the expression evaluated correctly using the order of operations? If not, find and correct the error

$$80 - \frac{1}{3} (15)^2 = 80 - 5^2 = 80 - 25 = 55$$

23. Tournament During a bowling tournament, you bowled three games with scores of 110, 130, and 129, respectively. Your average bowling score is given

by $\frac{110+130+129}{3}$ What is your average score?

Name: _____

Order of Operations Group Activity

There are 15 problems placed on the board. Take one at a time and solve them with your group, placing the answers below on the answer sheet.

1. _____

9. _____

2. _____

10. _____

3. _____

11. _____

4. _____

12. _____

5. _____

13. _____

6. _____

14. _____

7. _____

15. _____

8. _____

State below in a few complete sentences strategies that you used to work together effectively, and one skill which you need to improve on.
