

Practice A

For use with pages 16–22

Name the operation that would be performed first.

1. $16 - 8 + 4$

2. $2 \cdot 9 \div 3$

3. $10 \div (8 - 6)$

4. $16 \div 8 \cdot 2$

5. $16 + 8 \div 4 - 2$

6. $5 \cdot (4 + 2)^2$

Evaluate the expression for the given value of the variable.

7. $3 + 2x^2$ when $x = 2$

8. $30 - 3x^2$ when $x = 3$

9. $2y^2 + 5$ when $y = 3$

10. $4 \cdot 2a^3$ when $a = 10$

11. $2y^2 - 3y$ when $y = 4$

12. $6 + x^3$ when $x = \frac{1}{2}$

13. $a^2 \div 5 + 3$ when $a = 5$

14. $32 \div \frac{24}{n}$ when $n = 6$

15. $\frac{x}{3} + x^2 - 2$ when $x = 9$

Evaluate the expression.

16. $5 + 2 - 3$

17. $12 - 6 + 1$

18. $10 \cdot 2 \div 4$

19. $4 + 3 \cdot 2$

20. $8 \cdot 3 - 10$

21. $5 - 14 \div 7$

22. $2 + 36 \div 4$

23. $10 \div 5 + 3 \cdot 2$

24. $4 - 20 \div 10 + 7$

25. $3 \cdot 2^2 + 1$

26. $2 \cdot 3^2 \div 3$

27. $4(2 + 3) - 18$

Two calculators were used to evaluate the expression. They gave different results. Which calculator used the established order of operations?

28. $12 \square 4 \times 2 \oplus 1$ [ENTER]

Calculator 1: 5 Calculator 2: 17

29. $5 \times 3 \square 4 \times 2$ [ENTER]

Calculator 1: 7 Calculator 2: 22

30. $2 \times 6 \oplus 3 \oplus 3$ [ENTER]

Calculator 1: 5 Calculator 2: 13

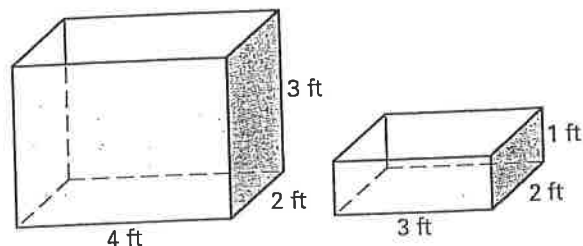
31. $10 \square 5 \times 4 \oplus 10$ [ENTER]

Calculator 1: 8 Calculator 2: 2

32. **Shotput** During a track meet, Kelly throws the shotput 36 feet, 35 feet, and 37 feet. Write an expression that represents the length of his average throw in feet. Evaluate the expression.

34. **Fish Tank** You have two fish tanks. The first has a length of 4 feet, a width of 2 feet, and a height of 3 feet. The second has length 3 feet, width 2 feet, and height 1 foot. Write an expression that represents the total amount of water in cubic feet both tanks will hold. Evaluate the expression.

33. **Sales Tax** You want to buy a newly released CD. The CD costs \$17 plus 6% tax. Write an expression that represents how much money in dollars you need to buy the CD. Evaluate the expression.



Practice B

For use with pages 16–22

Evaluate the expression.

1. $\frac{6 + 4}{2^4 + 4 \div 2}$

2. $\frac{2^3 \cdot 5}{3^2 - 3 \cdot 2}$

3. $\frac{3^4 - 4^3}{2 \cdot 8 + 1}$

Evaluate the expression for the given value of the variable.

4. $x^5 + 7$ when $x = 3$

5. $3y^3 \div 4$ when $y = 2$

6. $40 - 2a^2$ when $a = 4$

7. $16 + 9b$ when $b = 5$

8. $x^2 - 3x$ when $x = 7$

9. $2 \cdot 8t^2$ when $t = \frac{1}{4}$

10. $\frac{36}{a} + a$ when $a = 9$

11. $\frac{3}{5} \cdot y \div \frac{1}{10}$ when $y = \frac{3}{4}$

12. $\frac{1}{2} \cdot \frac{48}{b} + 7$ when $b = 6$

13. $\frac{x}{12} - \frac{2}{3} + 2$ when $x = 11$

Evaluate the expression.

14. $6 \div 3 \cdot 8$

15. $\frac{3}{5} - 2 \div 10$

16. $5^2 - 14 \div 7$

17. $2 + 3.6 \div 0.4$

18. $10 \div 5 + 3 \cdot 2$

19. $4 - 20 \div 10 + 7$

20. $\frac{3}{4} \cdot 2^2 + 1$

21. $\frac{2}{3} \cdot 3^2 \div 3$

22. $12(2 + 0.5) - 18$

23. $\frac{3}{5}(4 \cdot 10) - 6$

24. $[(7 - 5)^5 \div 8] - 4$

25. $2[(9 - 8)^2 + (12 - 5)^2]$

Two calculators were used to evaluate the expression. They gave different results. Which calculator used the established order of operations?

26. $7 \oplus 3 \otimes 6 \ominus 12$ [ENTER]

Calculator 1: 13 Calculator 2: 48

27. $15 \oplus 3 \oplus 4 \otimes 2$ [ENTER]

Calculator 1: 18 Calculator 2: 13

28. $7 \oplus 7 \oplus 7 \otimes 7 \oplus 7$ [ENTER]

Calculator 1: 2 Calculator 2: 8

29. $3 \oplus 2 \wedge 3 \ominus 5$ [ENTER]

Calculator 1: 6 Calculator 2: 120

30. **Shotput** During a track meet, Kelly throws the shotput 51 feet, 50 feet, and 58 feet. Write an expression that represents the length of his average throw in feet. Evaluate the expression.

31. **Sales Tax** You want to buy a newly released CD. The CD costs \$14.95 plus 6% tax. Write an expression that represents how much money in dollars you need to buy the CD. Evaluate the expression. Round to the nearest cent.