# HOMEWORK

## Homework Problems

Circle the homework problems assigned to you by the computer, then complete them below.

### Explain
### Operations on Numbers

Simplify the expressions in problems 1 through 8.

1. $-381 + 97$
2. $(4) \cdot (-8)$
3. $8 \div (9 - 5) + 7$
4. $-442 - (-126)$
5. $(-68) \div 17$
6. $(6 - 1) + 5 \cdot 3^2 - 8$
7. $-215 + [31 - (3 \cdot 2)]$
8. $(-12) \cdot (-7)$
9. Hiro bought 4 loaves of bread for \$2.25 a loaf, 2 pounds of cheese for \$3.50 a pound, and a dozen oranges for \$.20 each. If he paid with a \$20 bill, how much change did he get?
10. Betsy bought 4 cartons of ice cream for \$2.25 a carton, 7 jars of chocolate sauce for \$1.95 each, and a can of whipped cream for \$1.43. If she started out the day with \$12.37 in her checking account and wrote a check for all her purchases, how much did she have in her account at the end of the day?

Simplify the expressions in problems 11 and 12.

11. $42 \div [(2 \cdot 3) - (5 \cdot 2) + 1]$
12. $(6 - 3) \cdot 5 - (9 + 7) \div 2^3 + 4$

### Explore

13. Simplify the following expressions.

    a. $2 + 8 \cdot 3$

    b. $3 \cdot 5 + 3 \cdot 3$

    c. $6 + 3 \cdot 2^3$

    d. $\frac{3}{4}(16 - 2)$

    e. $(3 - 5) \cdot 8 - 9 \div (6 - 3)$

    f. $3 - 5 \cdot 8 - 9 \div 3 - 6$

14. Is the statement below true or false? Explain your reasoning.

    The product of a positive number and its opposite is positive.

15. Simplify the following expressions.

    a. $16 - 1 \cdot (13 - 9 \div 3)$

    b. $[(15 - 6 \div 2) \cdot 2 - 4] \div 2$

    c. $[(3 + 8) \cdot 2] \div 11 - 2$

    d. $3 \cdot (9 - 2) + 3 \cdot (9 + 2)$

    e. $\frac{2}{3}(17 - 26)$

    f. $\frac{3}{8}(13 + 5)$

16. Calculate the value of this expression:

    $(-3[6 - (-4)^2] + 3 \cdot 6) \div 2$

17. Is the statement below true or false? Explain your reasoning.

    The product of any two negative numbers is positive.

18. Determine which property justifies the following:

    $5(6 - 8) + 2 = 5 \cdot 6 + 5 \cdot (-8) + 2$

    commutative property of addition
    commutative property of multiplication
    associative property of addition
    associative property of multiplication
    distributive property

# APPLY

## Practice Problems

Here are some additional practice problems for you to try.

### Operations on Numbers

1. Find: $-34 + 82$
2. Find: $-22 + 10$
3. Find: $-73 + 39$
4. Find: $15 - (-43)$
5. Find: $-63 - (-18)$
6. Find: $-9 - (-36)$
7. Find: $4 \cdot (-15)$
8. Find: $-6 \cdot 24$
9. Find: $-5 \cdot 13$
10. Find: $-5 \cdot (-7)$
11. Find: $-12 \cdot (-28)$
12. Find: $-36 \cdot (-18)$
13. Find: $84 \div (-14)$
14. Find: $-136 \div 8$
15. Find: $-256 \div 64$
16. Find: $-78 \div (-13)$
17. Find: $-135 \div (-15)$
18. Find: $-132 \div (-11)$
19. Find: $3 \cdot 5 - 8$
20. Find: $8 + 2 \cdot 7$
21. Find: $26 \div [10 - (3 \cdot 4)]$
22. Find: $54 \div [3 - (2 \cdot 3)]$
23. Find: $6 \cdot (3 - 5)^2 + 24$
24. Find: $81 \div (10 - 7)^3 - 36$
25. Find: $72 \div (7 - 4)^2 + 11$
26. Find: $36 \div (5 - 2)^2 + 6 \cdot 7$
27. Find: $(-20 + 4) \div 2^3 - 3 \cdot 4^2$
28. Find: $(29 - 5) \div 2^2 + 3 \cdot 4$

# EVALUATE

## Practice Test

Take this practice test to be sure that you are prepared for the final quiz in Evaluate.

1. Simplify the following expressions:

   a. $-6 - (-7)$

   b. $-4 - 1$

   c. $3 + (-9)$

   d. $-6 + 5$

   e. $-1 + (-12)$

   f. $7 - (-3)$

2. Simplify the following expressions:

   a. $(-8) \cdot (-4)$

   b. $8 \cdot (-4)$

   c. $(-8) \cdot 4$

   d. $(-8) \div (-4)$

   e. $8 \div (-4)$

   f. $(-8) \div 4$

3. Calculate the value of the expression $-2[5 - (-3)^2] + 4 \cdot 6$.

4. Determine whether each of the following statements is true.

   a. The sum of a positive number and its opposite is less than 1.

   b. The sum of a number and its opposite is negative.

   c. The product of a non-zero number and its opposite is negative.

   d. The sum of any two negative numbers is positive.

5. Determine the property that justifies each one of the highlighted steps below.

| | |
|---|---|
| $2[(3 + 4) + (-3)]$ | commutative property of addition |
| **$= 2[3 + (4 + (-3)]$** | commutative property of multiplication |
| **$= 2[3 + ((-3) + 4)]$** | associative property of addition |
| **$= 2[(3 + (-3)) + 4]$** | associative property of multiplication |
| $= 2[0 + 4]$ | distributive property |
| $= 2[4]$ | additive inverse |
| $= 8$ | multiplicative inverse |

6. Yoko received $30.25 in credit when she returned a dress at a store. She then bought two pairs of jeans there for a total of $37.50. How much does she now owe the store?

7. Determine which property justifies the following:

   $5(10 + (-2)) = 5(10) + 5(-2)$

   commutative property of addition

   commutative property of multiplication

   associative property of addition

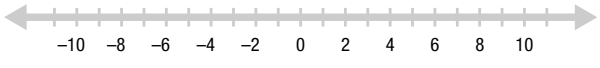
   associative property of multiplication

   distributive property

   additive inverse

   multiplicative inverse

8. Find the value of $[-(5 - 12)] \cdot (-1)$. Plot this value on the number line.



# TOPIC 1 CUMULATIVE ACTIVITIES

## CUMULATIVE REVIEW PROBLEMS

These problems combine all of the material you have covered so far in this course. You may want to test your understanding of this material before you move on to the next topic. Or you may wish to do these problems to review for a test.

1. Circle the true statements.

   $-3(2) < -2(3)$

   $\frac{10}{12} = \frac{5}{6}$

   $\frac{2}{5} < \frac{4}{7}$

   $9 < 5 + 3$

   $|-8| \geq |7|$

2. Find: $2^5 \cdot 3^2$

3. Find the GCF of 39 and 41.

4. Find: $\frac{15}{28} \cdot \frac{12}{25}$

5. Find: $\frac{6}{7} - \frac{1}{7}$

6. Find: $5^2(4 + 2) + 3^4$

7. Circle the true statements.

   $\frac{12}{15} \neq \frac{3}{4}$

   $|6| < |-14|$

   $2(5) < 2(8)$

   $(-2)(5) < (-2)(8)$

   $\frac{3}{8} \div \frac{9}{11} = \frac{8}{3} \cdot \frac{9}{11}$

8. Rewrite using exponents: $5 \cdot 5 \cdot 5 \cdot 7 \cdot 7 \cdot 7 \cdot 7$

9. Write in lowest terms: $\frac{56}{63}$

10. Find: $\frac{2}{9} + \frac{5}{9}$

11. Find: $(2 - 7) \cdot (8 + 4) - 1^{12}$

12. Circle the true statements.

    $12 \geq 12$

    $|-3| < |-2|$

    $\frac{9}{4} > 3$

    $|0| = 0$

    $\frac{5}{7} \cdot \frac{2}{9} = \frac{5}{7} \div \frac{9}{2}$

13. Find the LCM of 15 and 16.

14. Find: $\frac{56}{45} \div \frac{14}{75}$

15. Find: $6[(4 + 2) - 5(3 - 1) + 7]$

16. Find: $6^3 \cdot 4^2$

17. Find: $\frac{14}{15} \cdot \frac{20}{21}$

18. Find: $7^3 - 15[(5 - 2) \cdot 3 - 1]$

19. Plot the points $\sqrt{17}$, $\pi$, 4, and $\sqrt{8}$ on the number line below, then order the points from smallest to largest.

20. Find: $\frac{17}{30} + \frac{29}{24}$

21. Circle the true statements.

    The opposite of –3 is 3.

    The correct order of operations is to add before you subtract.

    A negative number divided by a positive number is negative.

    The multiplicative inverse of 7 is $-\frac{1}{7}$.

22. Find: $\frac{3}{14} + \frac{7}{18}$

23. Find the LCM of 6 and 9.

24. Find the GCF of 45 and 36. Write your answer using exponents.

25. Find: $\frac{11}{18} \div \frac{25}{6}$

26. Write in lowest terms: $\frac{90}{126}$

27. Find: $\frac{7}{15} - \frac{19}{25}$

28. Circle the true statements.

$\frac{3}{4} + \frac{1}{6} = \frac{4}{10}$

$\frac{3}{4} \cdot \frac{1}{6} = \frac{3}{24}$

$-2 > 0$

$|-5 + 2| \leq |2 - 5|$

$\frac{2}{3} \neq \frac{5}{6}$

29. Find the GCF of 88 and 121.

30. Find the GCF of 90 and 315. Write your answer using exponents.