

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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For #1-3. Write an algebraic expression.

1. The product of  $x$  and 7 \_\_\_\_\_

2. The difference of  $a$  and two times  $b$  \_\_\_\_\_

3. The quotient of  $a$  number and 7 \_\_\_\_\_

4. Evaluate  $x - yz$  for  $x = 2$ ,  $y = 3$ , and  $z = -4$ .

5. Simplify  $-3(2x - 5)$

6. Simplify  $20 \div 4 \times 5 - 5 \div 5 \times 5$

7. It costs \$45 a day to rent a car, plus \$0.75 per mile you drive. Say you drive 160 miles. How much money will you owe? (Show your work.)

8. Absolute value.  $|12 - 16| =$

9. 
$$\begin{bmatrix} 2 & 3 \\ -1 & 9 \end{bmatrix} - \begin{bmatrix} -2 & 3 \\ -5 & -1 \end{bmatrix}$$

10. 
$$-2 \begin{bmatrix} 1 \\ 2 \\ -3 \end{bmatrix}$$

11. We have a certain number of students in our class. A college Calculus class has 4 more than twice as many students as we have. Together there are 64 students. How many students are in the Calculus class? Show your work.

Solve the following equations.

12.  $50 = x - 2$

13.  $-4 = x - 5$

14.  $\frac{y}{23} = -2$

15.  $\frac{-1}{2}x = 44$

16.  $8x - 4 = -15$

17.  $2x - 5 - x = 13$

18.  $2x - 4 + 1 = x - 10$

19.  $\sqrt{16} = \underline{\hspace{2cm}}$

20.  $\sqrt{32} = \underline{\hspace{2cm}}$

21.  $-3\sqrt{32} = \underline{\hspace{2cm}}$

22. Name all three sets of numbers that -7 belongs to: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

23. Rational numbers are \_\_\_\_\_.

Two examples of rational numbers are \_\_\_\_\_ and \_\_\_\_\_

24. Irrational numbers are \_\_\_\_\_.

Two examples of irrational numbers are \_\_\_\_\_ and \_\_\_\_\_

26. Are all integers real numbers? \_\_\_\_\_ Why? \_\_\_\_\_

27. Are all real numbers integers? \_\_\_\_\_ Why? \_\_\_\_\_