

Diagnostic #1

Multiple Choice - Identify the letter of the choice that best completes the statement or answers the question.

1. Write a variable expression for 9 more than a number s .

Evaluate

2. $47 + 2d$, for $d = 3$
3. $31 - 4a + -2b$ for $a = 10$, $b = -9$

Find the sum.

5. $-10 + 1 + (-6)$
6. $6\frac{4}{12} + 2\frac{2}{12}$
7. $6 - (-9)$

The pair of figures is similar. Find x . Round to the nearest tenth if needed.

8. A tree casts a shadow 10 ft long. A boy standing next to the tree casts a shadow 2.5 ft. long. The triangle shown for the tree and its shadow is similar to the triangle shown for the boy and his shadow. If the boy is 5 ft. tall, how tall is the tree?
9. A map has a scale of 1 cm : 20 km. Two cities are 2.5 cm apart on the map. To the nearest tenth of a kilometer, what is the actual distance corresponding to the map distance?
10. What percent of 20 is 18?
11. What is 6% of 117?
12. Used CDs make up 41.3% of a music store's stock. If the store has a total of 1000 CDs, estimate the number of used CDs in stock.
13. During the month of February, Fabulous Feet Shoe Mart sold 50 pairs of red loafers. After an ad campaign to boost sales, they sold 60 pairs in March. Find the percent of increase in sales.
14. The circulation of a newsletter decreased from 5200 to 3140. Find the percent of decrease in circulation to the nearest percent.
15. Emma already has read 6 of 20 books on her summer reading list. What percent of the books on her list has she read already?
16. The Mogul Runners ski club planned a trip to Park City. Of the total number of members belonging, 11 signed up to go. If this is 25% of the club, how many total members does the ski club have?

In which quadrant does the point lie? Write the coordinates of the point.

17. 30% of what is 42?
18. What percent of 30 is 12?
19. What is 7% of 205?
20. What percent of 30 is 12?
21. 30% of what is 42?
22. What is 7% of 205?
23. Use the Associative Property of Addition to find the total of 1, 10, and 18 in two different ways.
24. Which choice shows the next step needed to simplify using the Distributive Property?

Simplify the expression

25. $6(6) + 6(4)$
26. $12(9) - 12(11)$

Order from least to greatest.

27. $-0.9, 0.45, 2/3, -1/5$
28. Solve for x . $3x + 7 = -2$
29. Sue needs 2 cups of flour for a batch of cookies.

How many batches can she make with 9 cups of flour?

Solve the inequality and graph the solution

30. Find the mean, median, and mode of this data: 49, 57, 49, 57, 49, 51, 54.
If necessary, round to the nearest tenth.
31. The table shows the number of tractors per 1,000 people in selected countries. Find the mean, median, and mode of the data.

Country	Number
Ireland	47
Norway	41
Denmark	40
Canada	35
France	30
Sweden	27
Germany	27
Japan	25
Italy	23
United States	22
Spain	18
Switzerland	17
United Kingdom	10

Solve the equation.

32. $d + 0.7 = 0.9$
33. Evaluate the expression $-5a + 3b$ for $a = 4$ and $b = 3$.
34. What fraction is equivalent to .35?
35. Write 806,000,000 in scientific notation.
36. Write 0.000000474 in scientific notation.
37. Write 1,205,000 in standard notation.

Write as a simplified fraction.

38. 0.68

Solve the inequality.

39. $c - 12 > -1$
40. $-2d + 12 > -2$