

1. A plumber charges \$89 for a service call plus \$20 for each hour of work. The expression below can be used to determine the total charge for working h hours.

$$89 + 20h$$

What would be the total charge for a service call that took 2 hours?

- A \$109
- B \$111
- C \$129
- D \$291

2. Ms. Bradshaw picked 36 tomatoes. She kept 8 of the tomatoes and shared the rest of the tomatoes equally with n neighbors. The expression below can be used to determine the number of tomatoes each neighbor received.

$$\frac{36 - 8}{n}$$

What is the number of tomatoes each neighbor received if Ms. Bradshaw shared the rest of the tomatoes equally with 4 neighbors?

- A 1 tomato
- B 7 tomatoes
- C 11 tomatoes
- D 34 tomatoes

3. Ms. Pappas used the expression $4x + 5$ to calculate the number of chairs to order for a workroom, where x is the number of tables in the workroom. How many chairs should she order for a workroom with 12 tables?

4. Zaria earns \$6 per hour at her job. She also earned a bonus of \$30 this week. To find the total amount she earned this week, Zaria used the expression $6h + 30$, where h is the number of hours she worked this week. Zaria worked 32 hours this week. What is the total amount of money Zaria earned this week?

- A \$68
- B \$192
- C \$222
- D \$662

5. At the movies, drinks cost \$2 each and popcorn costs \$5 per box. The total cost of buying drinks and popcorn can be determined using the expression below.

$$2d + 5p$$

In the expression, d is the number of drinks bought and p is the number of boxes of popcorn bought. What is the cost of 4 drinks and 6 boxes of popcorn?

- A \$32
- B \$38
- C \$42
- D \$80

6. What is the value of the expression below when $x = 6$ and $y = 2$?

$$8x - y$$

- A 84
- B 46
- C 12
- D 4

7. Solve the equation below.

$$3x + 6 = 99$$

What is the value of x ?

- A 16
- B 17
- C 31
- D 35

8. The total number of lawns mowed by Bob and Clara can be represented by

$$x + 3x = 20$$

where x is the number of lawns mowed by Bob and $3x$ is the number of lawns mowed by Clara. How many lawns did Clara mow?

- A 4 lawns
- B 5 lawns
- C 15 lawns
- D 16 lawns

9. What number goes in the _____ ?

$$10 + 16 \div 2 \times 4 = \underline{\hspace{2cm}}$$

- A 12
- B 42
- C 52
- D 72

10. A baseball team will play 12 home games during the season. It has played 6 home games so far. Of the season's remaining games, $\frac{1}{3}$ will be played at home. The equation

$$\frac{g}{3} + 6 = 12$$

can be used to find the total number of games, g , remaining this season. How many games, g , remain in the season?

- A 6 games
- B 18 games
- C 24 games
- D 54 games

11. Michael paid a total of \$48 for 4 pizzas. He used a coupon for \$4 off the entire order. The equation below can be used to determine the regular price of 1 pizza, p .

$$4p - 4 = 48$$

What is the regular price of 1 pizza?

- A \$11
- B \$12
- C \$13
- D \$16

12. Derek solved the equation $48 - d = 6$ to find out how many dollars, d , he spent. How many dollars did Derek spend?

- A \$8
- B \$42
- C \$54
- D \$288

13. It takes 1 ticket to ride the Ferris wheel at an amusement park. The amusement park earns \$144 for each Ferris wheel ride if the cars are full. The Ferris wheel seats 48 people.

Write an equation that can be used to determine the cost (c) for 1 ticket.

Equation: _____

The roller coaster ride seats a total of 16 people. It takes 2 tickets per person to ride the roller coaster. One ticket for the roller coaster costs the same amount as one ticket for the Ferris wheel.

If a full Ferris wheel is run 10 times a day, how many full roller coaster rides need to run each day to earn the same amount of money as the Ferris wheel?

_____ roller coaster rides

What value of n makes the equation below true?

$$4n = 220$$

- A 50
- B 55
- C 216
- D 220

14. Joel ran a distance of 5 miles in $62\frac{1}{2}$ minutes. He can find s , his mean time per mile, by solving the equation shown below.

$$5s = 62.5$$

What is the value of s ?

_____ mins/mile

15. Cyril wrote the equation $15 \cdot t = 60$ to calculate the price of one concert ticket, t .

What is the value of t ?

- A \$4
- B \$45
- C \$75
- D \$90

16. A rule to calculate the amount of medicine (mL) a child needs is:
Child amount = (Adult amount \times Age of child) \div (Age of child + 12)
Use this rule to complete the table.

Adult amount (mL)	Age of child (years)	Child amount (mL)
10	8	

If $n \times a = 24$ and $n \times a + b = 33$, what is the value of b ?

- A 3
- B 4
- C 6
- D 9

17. Calculate the value of x if $x - 41 = 12$.

18. Consider the equation below.

$$5 \times n + 12 = 32$$

What is the value of n in this equation?

- A 3
- B 4
- C 15
- D 17

19. If $6 \times a = 12$ and $6 \times a - b = 8$, what is the value of b ?

- A 2
- B 4
- C 6
- D 8

20. Consider the equation below.

$$3 \times m + 2 \times n = 36$$

Which values of m and n would **not** make the equation true?

- A $m = 2, n = 15$
- B $m = 4, n = 12$
- C $m = 6, n = 9$
- D $m = 8, n = 7$

21. Consider the equation below.

$$2 \times n + 3 = 113$$

The value of n in the equation above is _____.

22. If $\square - 63.55 = 106.45$ then the value of \square is

- A 82.90
- B 83.90
- C 170.00
- D 180.00

23. The value of \square in the following two equations is the same.

$$24 + 9 = \square$$

$$44 - 5 = \square + \triangle$$

What is the value of \triangle ?

- A 5
- B 6
- C 7
- D 8

24. Use the following information to answer this question:

Step 1: $5 \div 1 = A$

Step 2: $A \times 5 = B$

Step 3: $B - 9 = C$

Step 4: $C + 6 = D$

Step 5: $D \div E = 1$

What is the value of the letter E in step 5 shown above?

- A 1
- B 2
- C 11
- D 22

25.

<i>Left Side</i>	<i>Right Side</i>
$12 + 6 = 22 - 4$	

Which of the following operations would preserve equality in the equation shown above?

- A** Subtract 4 from the left side and add 4 to the right side
- B** Subtract 6 from the left side and add 4 to the right side
- C** Subtract 6 from the left side and subtract 6 from the right side
- D** Subtract 4 from the left side and subtract 6 from the right side

26. A restaurant charges \$60 per hour and \$10 per person for parties.

Which of the following equations can be used to determine the total cost for a 3-hour party for 35 people?

- A** Total cost = $(60 \times 35) \times (10 \times 3)$
- B** Total cost = $(60 \times 35) + (10 \times 3)$
- C** Total cost = $(60 \times 3) \times (10 \times 35)$
- D** Total cost = $(60 \times 3) + (10 \times 35)$

27. Josh has 30 baseball cards. He keeps 10 cards for himself and gives 5 cards to his sister. Josh then shares the remaining cards equally among 5 friends.

How many cards does Josh give to each friend?

- A** 2
- B** 3
- C** 4
- D** 5

28. Select a number sentence to match the following statement:
Seven less than a certain number m is equal to twelve.

- A $7 - m = 12$
- B $12 - m = 7$
- C $m + 7 = 12$
- D $m - 7 = 12$

29. $4 \times (12 - 8) \div (4 + 0) \times 1 = \underline{\hspace{2cm}}$.

- A 0
- B 4
- C 8
- D 16

30. With which operation sign must you replace the Δ so that the number sentence $4 \times 3 \Delta 6 \div 2 = 15$ is correct?

- A \times
- B \div
- C $+$
- D $-$

31. Look at the equation below.

$$72 \div \square - 3 = 6$$

What value belongs in the box?

- A 8
- B 9
- C 12
- D 24