

1. Evaluate: $(3 + 5)^2$

- A 8
- B 16
- C 34
- D 64

2. Solve: $\frac{w}{5} - 1 = 15$

- A 16
- B 20
- C 70
- D 80

3. Evaluate $3x^2 - xy^2$ when $x = 2$ and $y = 5$.

- A -8
- B -38
- C -64
- D -gg

4. The Irvine family drove 15.3 miles from Lakeview to Newport and 23.4 miles from Newport to Browning. On the way back, the Irvines took the same route, but they stopped for lunch after driving 11.6 miles. If they continue driving after lunch, how much farther do they have to drive to return to Lakeview?

- A 27.1 miles
- B 32.9 miles
- C 38.7 miles
- D 50.3 miles

5. Which of these ordered pairs lies on both the x - and y -axes?

A (1, 1)

B (1, 0)

C (0, 1)

D (0, 0)

6. Which of these equations represents the problem below?

A set of coins consisting of quarters and dimes equals \$1.95. If there are 7 dimes, how many quarters (q) are there?

A $25q + (10 + 7) = 195$

B $25q + (10 \cdot 7) = 195$

C $10q + (25 + 7) = 195$

D $10q + (25 \cdot 7) = 195$

7. Sue's wages are directly proportional to the number of hours she works. If she earns \$100.00 for working 5 hours, how much will she earn if she works 19 hours?

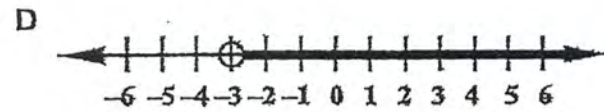
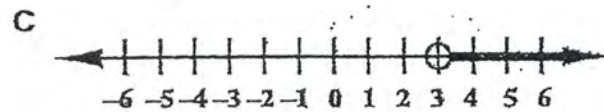
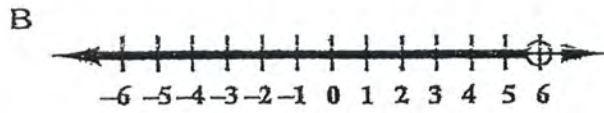
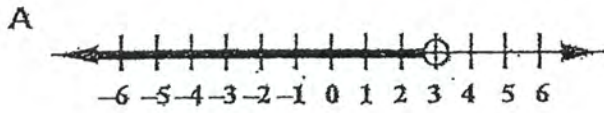
A \$95.00

B \$380.00

C \$400.00

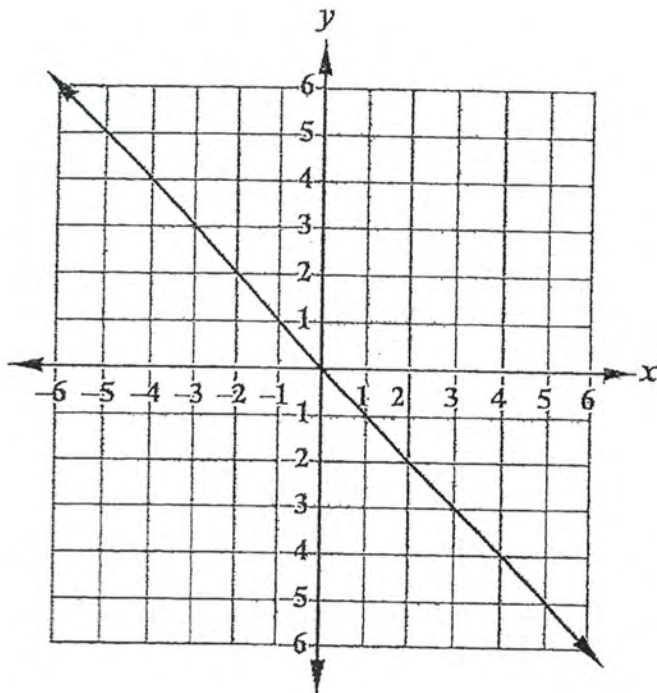
D \$1,900.00

8. Which of these graphs represents the inequality $2x < 6$?



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9. Which of these equations represents the graph shown below?



- A $y = x + 1$
- B $y = x$
- C $y = -x$
- D $y = -x + 1$

10. Simplify: $5[4(22 - 18) + 4]$

- A 20
- B 84
- C 100
- D 160

11. A number cube numbered 1 through 6 is rolled. What is the probability of rolling an odd number?

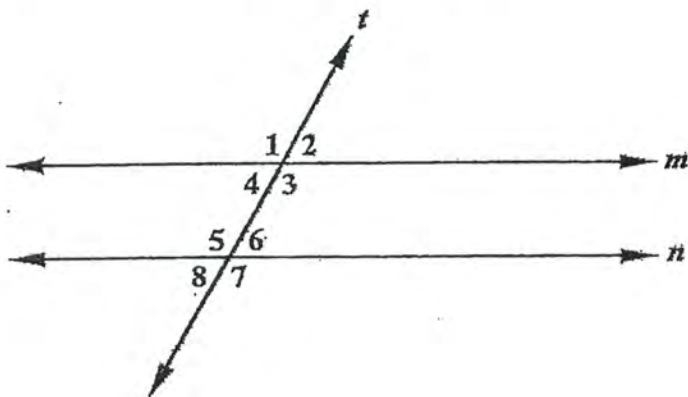
A $\frac{1}{6}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

12. If $m \parallel n$, which of these angles are congruent?



A $\angle 1$ and $\angle 2$

B $\angle 1$ and $\angle 5$

C $\angle 1$ and $\angle 6$

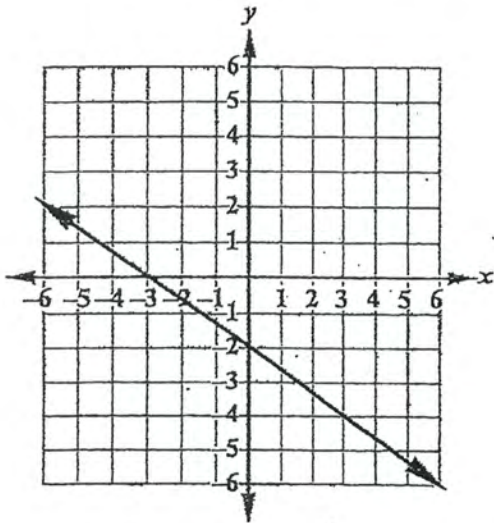
D $\angle 1$ and $\angle 8$

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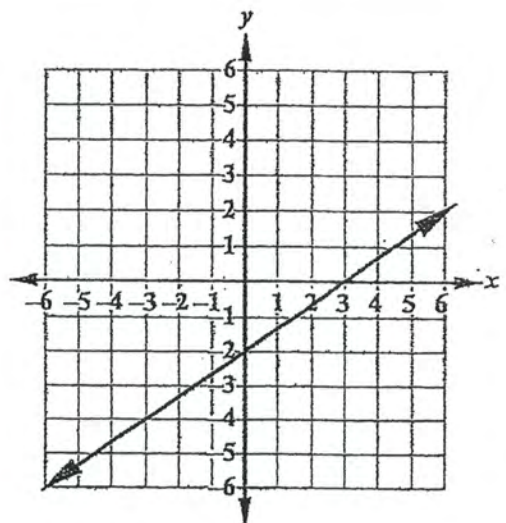
13.

Which of these graphs is represented by the equation $y = -\frac{2}{3}x - 2$?

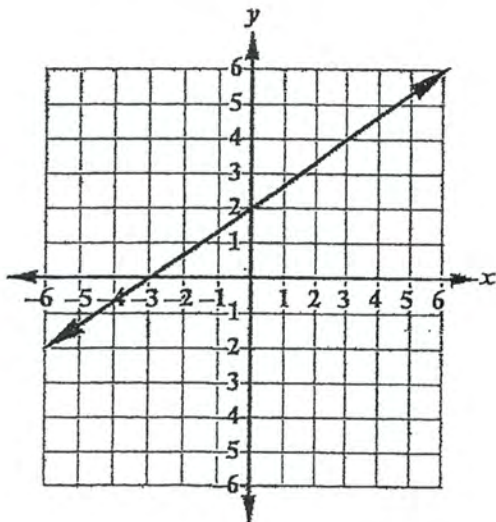
A



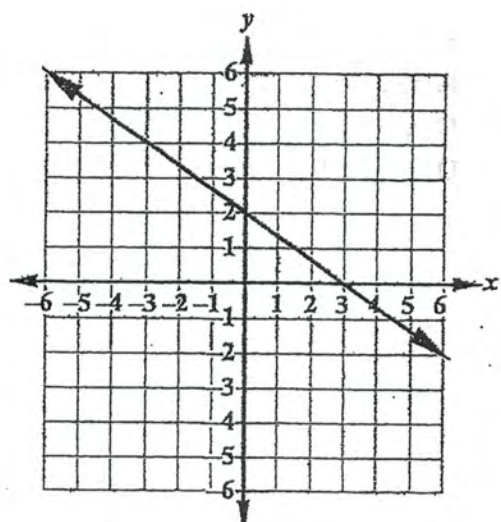
C



B



D



14.

Simplify: $\frac{\frac{2}{3}}{\frac{6}{7}}$

A $\frac{4}{7}$

B $\frac{7}{9}$

C $\frac{9}{7}$

D $\frac{7}{4}$

15. Simplify: $3x + y - 2x + 5 - 3y$

A $4xy$

B $-xy + 5$

C $x - 2y + 5$

D $x + 4y + 5$

16. Simplify: $\sqrt{18}$

A 6

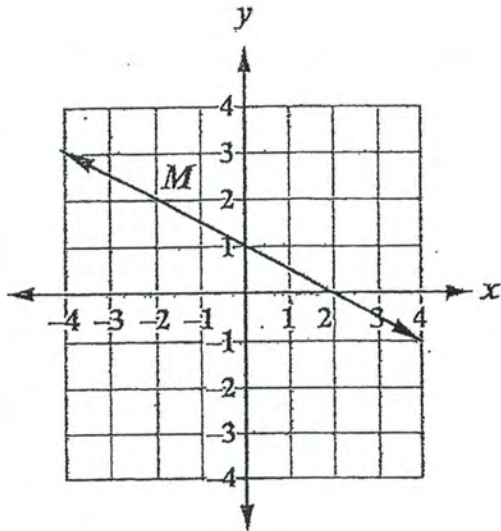
B 9

C $3\sqrt{2}$

D $9\sqrt{2}$

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17. What is the x -intercept of line M in the graph below?



A -2

B $-\frac{1}{2}$

C 1

D 2

18. If a compact car can travel 434 miles on 12.4 gallons of gas, how far can it travel on 4 gallons of gas?

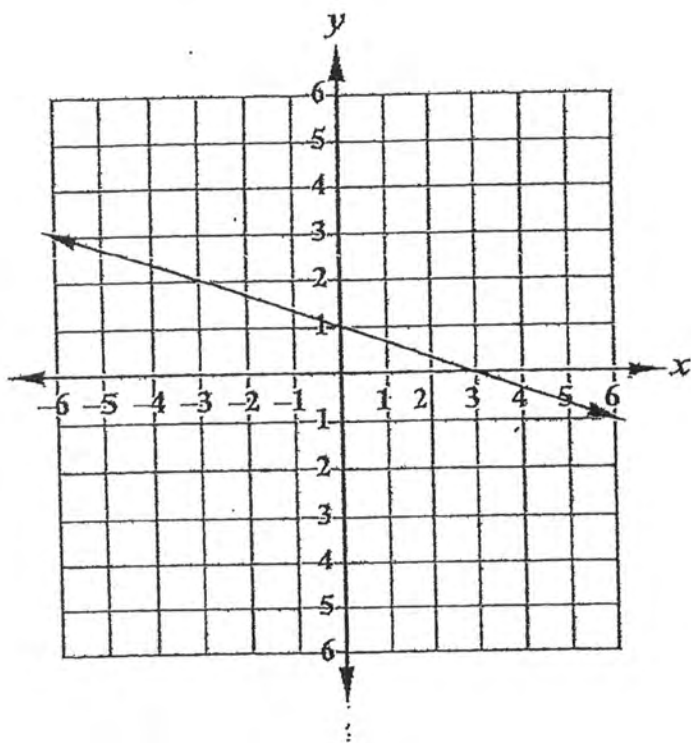
A 35 miles

B 52 miles

C 108 miles

D 140 miles

19. Which of these equations represents the graph shown below?



- A $3x + y = 1$
- B $-3x + y = 1$
- C $x + 3y = 3$
- D $x + 3y = 3$

20. Simplify: $|-14| + |-21|$

- A 7
- B -7
- C 35
- D -35

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21. A restaurant has a CD player that holds 25 CDs, of which 5 are country music. The CD player has an option that will randomly select and play entire CDs. Using the random selection option, the first CD played is country music. If the first CD played cannot be selected again, what is the probability that the second CD played will also be country music?

A $\frac{1}{24}$

B $\frac{1}{30}$

C $\frac{1}{6}$

D $\frac{2}{5}$

22. Which of these expressions represents twice the sum of a number and 3?

A $(2x) \cdot 3$

B $2x + 3$

C $2 + x + 3$

D $2(x + 3)$

23. Solve: $3n + 2 = 2n + 4$

A $\frac{2}{5}$

B $\frac{6}{5}$

C 2

D 6

24. George bought some lumber for \$2.25 per piece plus a bag of nails that cost \$4.50. If he paid a total of \$72.00, excluding tax, how many pieces of lumber did he buy?

- A 30
- B 32
- C 34
- D 36

25. Which inequality best describes this situation?

Tom watched television 4 or more hours each day.

- A $T \geq 4$
- B $T > 4$
- C $T < 4$
- D $T \leq 4$

26. Simplify: $\frac{2}{3} \cdot \frac{3}{5}$

A $\frac{2}{5}$

B $\frac{7}{15}$

C $1\frac{1}{5}$

D $2\frac{1}{2}$

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27. Solve: $-3 - (-4) =$

- A -7
- B -1
- C 1
- D 7

28. What is the probability of randomly selecting the letter "S" from the word TENNESSEE?

A $\frac{2}{9}$

B $\frac{1}{3}$

C $\frac{4}{9}$

D $\frac{7}{9}$

29. Solve: $\frac{3x}{5} = 15$

- A 1
- B 9
- C 25
- D 75

30. Which of these numbers will make the inequality true?

$$\sqrt{11} < \square$$

- A 4
- B 3
- C 2
- D 1

31. Simplify: $4y - y + 10 - 15$

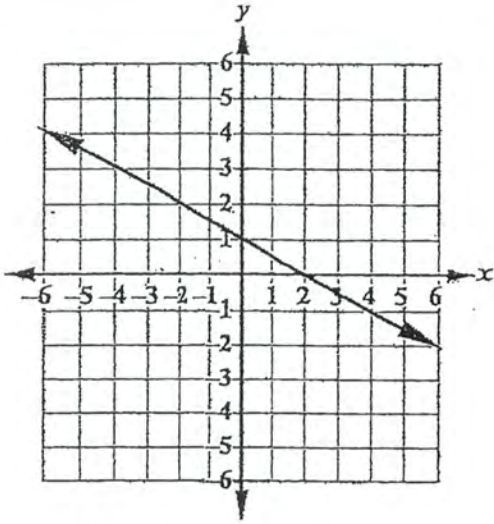
- A $-2y$
- B $3y - 5$
- C $3y + 5$
- D $4y - 5$

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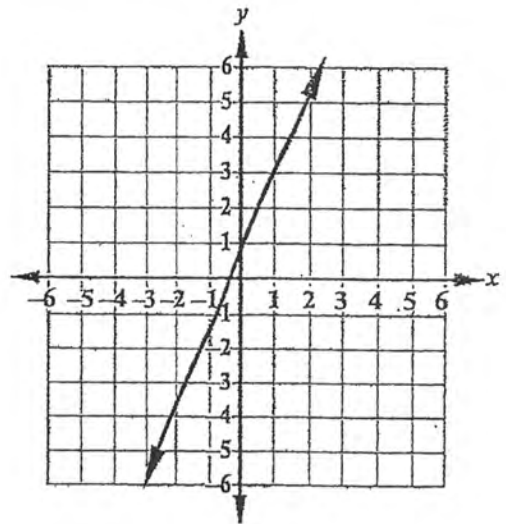
32.

Which of these graphs is represented by the equation $y = -\frac{1}{2}x + 1$?

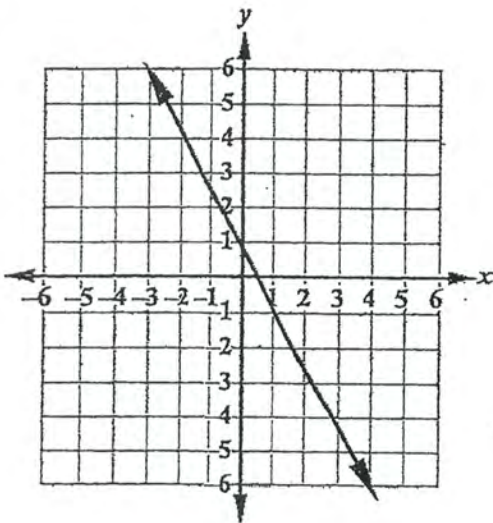
A



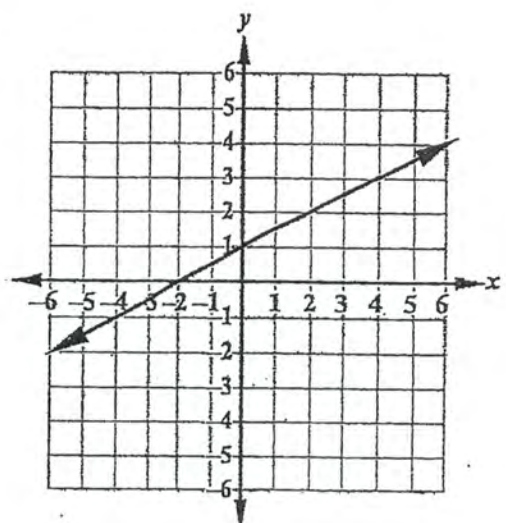
C



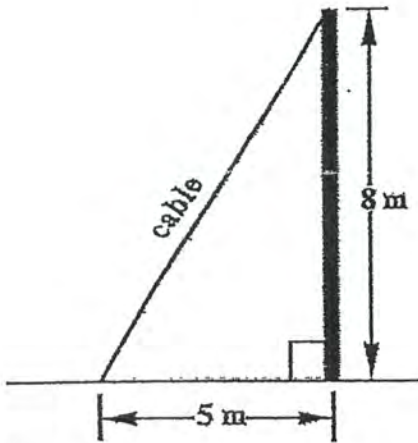
B



D



33. A telephone pole is 8 meters high. A cable must be attached from the top of the pole to a point on the ground 5 meters from the bottom of the pole. How much cable is needed?



- A 13 meters
B 89 meters
C $\sqrt{39}$ meters
D $\sqrt{89}$ meters
34. What is the mean of this set of data?

~~34, 40, 18, 23, 40~~

- A 18
B 31
C 34
D 40

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35. One of the members of the cross-country team can run 12 miles in 1 hour. At this rate, how many miles can he run in $\frac{3}{4}$ hour?

- A 7
- B 9
- C 16
- D 21

36. Which of these numbers does not have a reciprocal?

A $\frac{0}{8}$

B $\frac{1}{8}$

C $\frac{8}{5}$

D $\frac{6}{6}$

37. The median of 7 consecutive even numbers is 28. What is the largest number?

- A 31
- B 34
- C 35
- D 40

38. Solve: $x - 12 = -7$

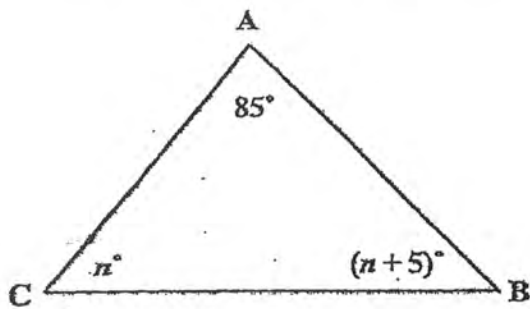
A -19

B -5

C 5

D 19

39. What is the measure of $\angle B$ in the figure below?



A 40°

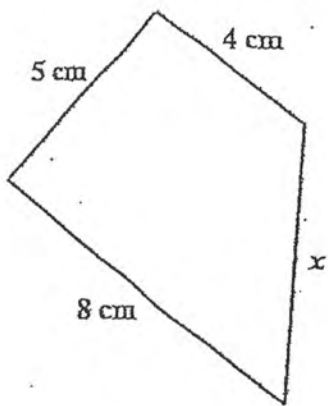
B 45°

C 50°

D 55°

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40. If the perimeter of the figure shown below is 23 centimeters, what is the length of side x ?



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

41. All of the following expressions have a value between 0 and 1, except

- A $\frac{(-3^7)}{(-3)^9}$
- B $4^{-10} \times 4^6$
- C $\frac{(8^3)^2}{8^{-4}}$
- D $\left(\frac{2}{5}\right)^8 \times \left(\frac{2}{5}\right)^5$

42. Simplify $(3^3 \times 5^3)^{-2}$.

- A $\frac{1}{15^{12}}$
- B $\frac{1}{15^6}$
- C 15^{-18}
- D 15^4

43. Which equation defines a linear function?

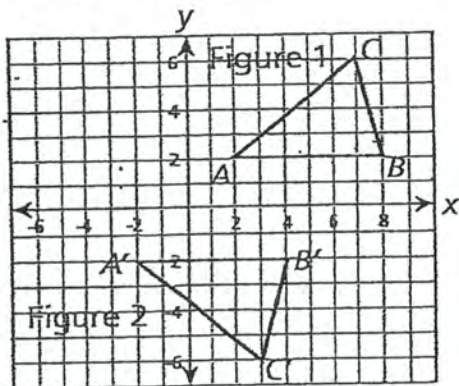
A $y = \frac{2}{4}x + 12$

B $y = x^2 + 4x - 6$

C $x^2 + y^2 = 16$

D $\frac{1}{x^2} + \frac{1}{y^2} = 4$

44. Which sequence of transformations is performed so that Figure 1 is congruent to Figure 2?



- A Figure 1 is reflected over the x-axis and translated 4 units to the left.
- B Figure 1 is reflected over the y-axis and translated 4 units down.
- C Figure 1 is rotated 180° counterclockwise around the origin and translated 6 units to the right.
- D Figure 1 is rotated 90° clockwise around the origin and translated 6 units down.

45. Which is closest to the amount of water that fills a water balloon with a diameter of 6 inches?

A 904.32 in.^3

B 150.72 in.^3

C 113.04 in.^3

D 63.585 in.^3

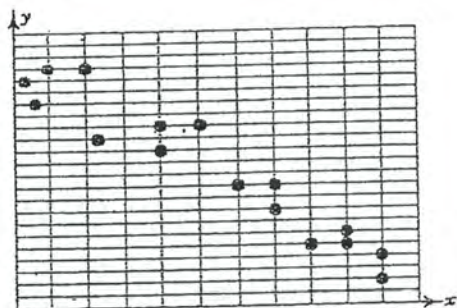
46. In a survey, citizens of Joss and Kath Counties were asked whether they voted "yes" or "no" on building a new courthouse. The table shows the results.

Vote	Joss	Kath	Total
Yes	15	58	73
No	26	9	35
Total	41	67	108

To the nearest percent, what percent of all "no" votes came from Kath County?

- A 13% C 26%
 B 16% D 35%

47. Look at the following scatter plot.



Which could be the equation for the line of best-fit? Select all that apply.

- A $y = \frac{5}{2}x - \frac{9}{5}$
 B $y = -0.03x + 81.357$
 C $y = -8.25x + 150$
 D $y = -\frac{2}{3}x - \frac{10}{3}$
 E $y = -25x + 1,000$

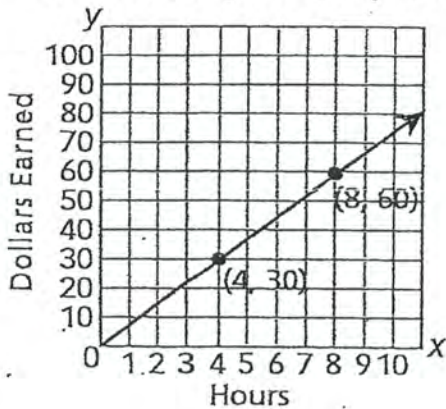
48. In scientific notation, what is the sum of 2.3×10^{-3} and 5.4×10^{-4} ?

- A 2.84×10^{-3}
 B 5.63×10^{-3}
 C 7.7×10^{-7}
 D 12.42×10^{-12}

49.

Chad's pay rate for babysitting is $y = 9x$, where x is the number of hours he babysits, and y is the number of dollars he earns. Horatio's pay rate is shown in the graph below.

Horatio's Babysitting Pay Rate



Which of the following statements is true?

- A Chad makes \$1.00 more per hour than Horatio.
- B Chad makes \$1.50 more per hour than Horatio.
- C Chad makes \$1.00 less per hour than Horatio.
- D Chad makes \$1.50 less per hour than Horatio.

50.

Which equation forms a pair of linear equations with $9x + 12y = 48$ such that the system has no solution?

- A $16x - 12y = -48$
- B $6x + 12y = -48$
- C $3x + 4y = 12$
- D $6x + 8y = 32$