

1. Simplify the expression $\left(\frac{2}{3} - 3\frac{1}{5}\left(-\frac{7}{8}\right)\right) \div \left(2\frac{3}{5}\right) - \frac{1}{3}$.
 - (a) $\frac{55}{39}$
 - (b) $\frac{26}{17}$
 - (c) $\frac{2}{3}$
 - (d) 1

2. Which of the following is a solution of $5x - y = 8$?
 - (a) $x = 3$ and $y = -7$
 - (b) $x = 2$ and $y = -2$
 - (c) $x = 1$ and $y = -3$
 - (d) $x = -1$ and $y = 13$

3. Perform the operation: $(5x - 2)^2 =$
 - (a) $25x^2 - 20x + 4$
 - (b) $25x^2 - 4$
 - (c) $20x^2 - 50x + 4$
 - (d) $25x^2 + 20x + 4$

4. Simplify: $(25m^2 - 9)\left(\frac{5m + 3}{5m - 3}\right)$
 - (a) $(5m + 3)^2$
 - (b) 1
 - (c) $5m - 3$
 - (d) $5(5m + 3)$

5. A 53-foot pipe has been cut into three parts. If the longest part is 4 times the shortest part, and the middle-sized part is 5 feet longer than the shortest part, how long is the longest part?
 - (a) 16
 - (b) 24
 - (c) 32
 - (d) 40

6. A couch is on a special sale at a 15% discount. If the sale price of the couch is \$357, what is the price of the couch before the discount?
- (a) \$528
 - (b) \$460
 - (c) \$410.55
 - (d) \$420
7. Evaluate the expression $\frac{|x - 6|}{6 - x}$ when $x = -3$.
- (a) 3
 - (b) -1
 - (c) -3
 - (d) 1
8. Multiply and simplify by combining like terms: $(a + 5)(a^2 - 5a + 25) =$
- (a) $a^3 - 25a^2 - 25a + 125$
 - (b) $a^3 + 125$
 - (c) $a^3 - 5a^2 - 25a + 125$
 - (d) $a^3 - 125$
9. Evaluate the following expression: $4(3 - 7) \div 2 + 8 =$
- (a) -1.6
 - (b) 0
 - (c) 10.5
 - (d) undefined
10. Find the indicated product and simplify by combining like terms: $(7m + 3n)(7m - 3n)$
- (a) $49m^2 - 21mn - 9n^2$
 - (b) $49m^2 - 9n^2$
 - (c) $49m^2 - 42mn - 9n^2$
 - (d) $7m^2 - 3n^2$
11. When $t = -5\frac{1}{2}$, then the expression $-8t - t^2 + \frac{1}{4}$ has value
- (a) -74
 - (b) $\frac{149}{2}$
 - (c) 74
 - (d) 14

12. Solve the following system of equations:

$$2x + 3y = 11$$

$$x - 4y = 0$$

- (a) $(x, y) = (4, 1)$
- (b) $(x, y) = (10, -3)$
- (c) $(x, y) = (1, 3)$
- (d) $(x, y) = (-1, 4)$

13. The difference between two numbers is 38. The sum of the smaller number and twice the larger number is 115. Find the larger number.

- (a) -46
- (b) -3
- (c) 51
- (d) 25

14. Simplify: $5xy - 8x^2 + 2xy - x^2$.

- (a) $7xy - 9x^2$
- (b) $3xy - 7x^2$
- (c) $-9x^2 + 3xy$
- (d) $7xy - 8x^2$

15. Solve the system of linear equations.

$$3x + 4y = 8$$

$$2x + 2y = 2$$

- (a) one of $(0, 2)$ or $(1, 1)$
- (b) one of $(1, -1)$ or $(-4, 5)$
- (c) one of $(4, -1)$ or $(6, -5)$
- (d) one of $(0, 1)$ or $(2, 0)$

16. The perimeter of a rectangular carpet is 42 feet. The width is half the length. Find the width of the carpet.

- (a) 6 feet
- (b) 7 feet
- (c) 8 feet
- (d) 10 feet

17. Simplify: $-2(x - (3(x - 1) - 4) + 5)$.

- (a) $-2x$
- (b) $-2x + 6$
- (c) $2x - 10$
- (d) $4x - 24$

18. Solve: $-6(t + 3) + 2(5 - t) = -9$

- (a) $\frac{11}{8}$
- (b) $\frac{17}{8}$
- (c) $\frac{22}{7}$
- (d) $\frac{1}{8}$

19. When three times a number is subtracted from fifteen, the result is twice the number. Find the number.

- (a) -2
- (b) 3
- (c) 5
- (d) 1

20. Solve $I = PRT$ for R .

- (a) $R = I - P - T$
- (b) $R = I - PT$
- (c) $R = \frac{PT}{I}$
- (d) $R = \frac{I}{PT}$

21. For the straight line $3x = 12 - 4y$, find the y -intercept.

- (a) $(0, 3)$
- (b) $(0, -3)$
- (c) $(3, 0)$
- (d) $(-3, 0)$

22. Perform the operations indicated. $\frac{2}{3} - \left(1\frac{3}{5}\right) \cdot \frac{2}{9} =$

(a) $\frac{8}{15}$

(b) $\frac{14}{45}$

(c) $-\frac{28}{135}$

(d) $-\frac{3}{4}$

23. Multiply: $(-8x^2y)(-3xy^4)$

(a) $24x^3y^5$

(b) $-11x^2y^5$

(c) $-24x^2y^4$

(d) $11x^3y^3$

24. Subtract: $(4a^4 - 5a^2 + 2a + 5) - (3a^3 - 3a^2 + 2a - 3)$.

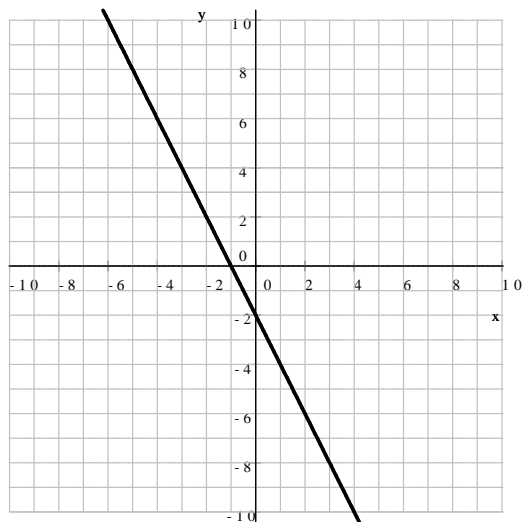
(a) $a^4 - 8a^2 + 4a + 2$

(b) $4a^4 - 2a^2 + 4a + 8$

(c) $4a^4 - 3a^3 - 2a^2 + 8$

(d) $a^4 - 2a^2 + 8$

25. Which equation does the graph below illustrate?



(a) $x + 2y = -2$

(b) $-x + 2y = 2$

(c) $2x + y = -2$

(d) $x - 2y = 2$