

1. Evaluate: $\frac{5}{8} - \frac{2}{3} + \frac{1}{6} \left(-\frac{1}{2}\right) =$

- a) $\frac{1}{24}$ b) $\frac{25}{24}$ c) $-\frac{1}{8}$ d) $-\frac{2}{7}$

2. If x represents a number, then "5 less than twice a number" can be expressed as:

- a) $5 - 2x$ b) $2x - 5$ c) $2(x - 5)$ d) $5x - 2$

3. Simplify: $8t - (-6t + 2)$

- a) $2t - 2$ b) $14t - 2$ c) $14t + 2$ d) $48t^2 + 16t$

4. When $p = \frac{5}{6}$, the value of the expression $-12p + 3$ is

- a) -7 b) -13 c) -16 d) -30

5. Simplify: $2x - 4(y - x) - 3y$

- a) $6x + 7y$ b) $x - 7y$ c) $-7y - 2x$ d) $6x - 7y$

6. If $x + \frac{4}{3} = \frac{5}{6}$, then $x =$

- a) $-\frac{1}{2}$ b) $\frac{3}{2}$ c) $-\frac{1}{3}$ d) $\frac{1}{6}$

7. If $-2(x - 5) + 3x = 4x - 2$, then $x =$

- a) -1 b) -3 c) 4 d) 5

8. If $a = -2$, $b = -1$, and $c = -4$, what is the value of $b^2 - 4ac$?

- a) -40 b) -33 c) -31 d) 5

9. Solve for x : $5x - (x + 4) = -8$
a) $x = -1$ b) $x = -8$ c) $x = 0$ d) $x = 4$
10. A coat is on a special sale at a 20% discount. If the sale price is \$ 96, what was the price of the coat before the discount?
a) \$ 102 b) \$ 115.20 c) \$ 120 d) \$ 110

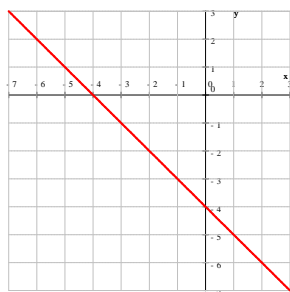
11. Solve the system of equations shown below

$$\begin{aligned}12x - 2y &= 10 \\ y &= 6x - 5\end{aligned}$$

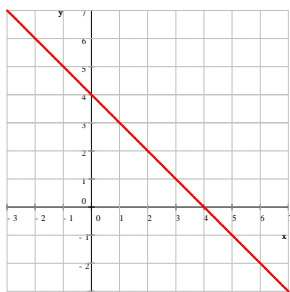
- a) (2, 7) c) It is an inconsistent system.
b) It is a dependent system. d) (-1, -11)
12. The x -intercept of $x - 2y = 4$ is
a) (4, 0) b) (-2, 0) c) (0, -2) d) (0, 4)
13. The y -intercept of $4x - 3y = 12$ is
a) (0, 3) b) (-4, 0) c) (0, -4) d) (3, 0)

14. Which of the following is the graph of $y = 2x + 4$?

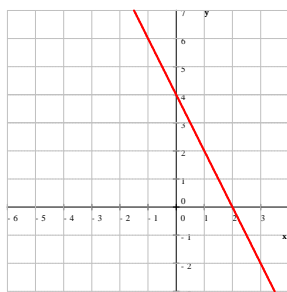
a)



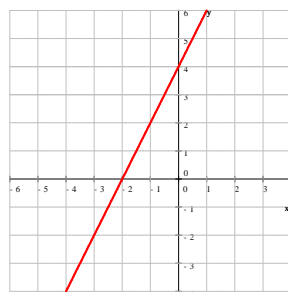
b)



c)



d)



15. Simplify: $\frac{5x^5y^4z}{30x^3yz^2}$
- a) $\frac{6x^2y^3}{z}$ b) $\frac{x^2y^3}{6z}$ c) $\frac{x^2y^3z}{6}$ d) $6x^2y^3z$
16. Which expression describes the area in square meters of a rectangle that has width $4x^2y^2$ meters and length $3x^3y^3$ meters?
- a) $12x^6y^6$ b) $12x^5y^5$ c) $7x^6y^6$ d) $7x^5y^5$
17. Express the number 0.000 000 148 in scientific notation.
- a) $1.48 \cdot 10^8$ b) $1.48 \cdot 10^{-8}$ c) $1.48 \cdot 10^7$ d) $1.48 \cdot 10^{-7}$
18. Which of the following is one of the factors of $3t^2 - 5t - 2$?
- a) $3t + 5$ b) $3t - 1$ c) $t - 2$ d) $3t - 2$
19. Factor $9x^2 - 25$
- a) $(3x - 5)(3x - 5)$ b) $(3x + 5)(3x + 5)$ c) $(9x - 5)(9x + 5)$ d) $(3x - 5)(3x + 5)$
20. Which of the following is a *common* factor of the polynomials $x^2 + x - 2$ and $x^2 - 4$?
- a) x^2 b) $x - 1$ c) $x - 2$ d) $x + 2$
21. Factor $p^2 - 4p - 32$
- a) $(p - 4)(p - 8)$ b) $(p - 4)(p + 8)$ c) $(p + 4)(p - 8)$ d) $p(p - 4) - 32$
22. Simplify: $(x^4)^2(x^{-2})^3$
- a) x^2 b) x^8 c) x^{10} d) x^{14}

23. Find the slope of the straight line passing through the points $(1, -2)$ and $(3, -4)$

- a) -1 b) 1 c) $-\frac{1}{2}$ d) $-\frac{5}{6}$

24. Multiply out: $(2x - 5)^2$

- a) $4x^2 - 25$ b) $2x^2 - 20x + 25$ c) $4x^2 + 25$ d) $4x^2 - 20x + 25$

25. Solve for h . $V = \frac{1}{3}bh$

- a) $h = \frac{V}{3b}$ b) $h = \frac{3V}{b}$ c) $h = \frac{bV}{3}$ d) $h = \frac{3b}{V}$

26. Find the x -coordinate of the point where the lines $x + 3y = -8$ and $4x - 3y = 23$ intersect.

- a) $x = 3$ b) $x = 5$ c) $x = -3$ d) $x = -5$

27. Solve the equation $\frac{x}{4} + \frac{3x - 1}{2} = \frac{3}{8}$

- a) $x = 1$ b) $x = 2$ c) $x = \frac{1}{2}$ d) $x = \frac{2}{7}$

28. Solve the system of linear equations

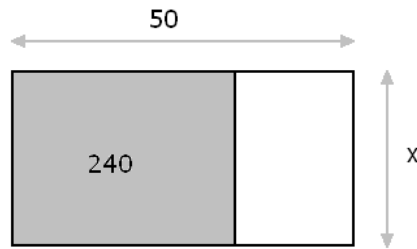
$$\begin{aligned}\frac{x}{3} + 6y &= 4 \\ y &= -5 - x\end{aligned}$$

- a) $\left(-\frac{42}{5}, \frac{17}{5}\right)$ b) $(-1, 4)$ c) $(-6, 1)$ d) $(12, 0)$

29. Solve the inequality $\frac{x + 7}{5} - \frac{x - 1}{3} \leq 2$

- a) $[-7, \infty)$ b) $(-\infty, -2]$ c) $[12, \infty)$ d) $[-2, \infty)$

30. The area of the shaded region of the rectangle shown below is 240. Find the area of the unshaded region in terms of x .



- a) $240x - 50$ b) $50x - 240$ c) $(240 - 50)x$ d) $(50 + x)240$

Answers:

- | | | | |
|------|-------|-------|-------|
| 1. c | 9. a | 17. d | 25. b |
| 2. b | 10. c | 18. c | 26. a |
| 3. b | 11. b | 19. d | 27. c |
| 4. a | 12. a | 20. d | 28. c |
| 5. d | 13. c | 21. c | 29. d |
| 6. a | 14. d | 22. a | 30. b |
| 7. c | 15. b | 23. a | |
| 8. c | 16. b | 24. d | |

Last revised: November 13, 2007