

Spring 2016


CUNY Elementary Algebra Final Examination (CEAFE) Practice Tests

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**Additional four samples for CEAFE
(CUNY Elementary Algebra Final Examination)**

(effective June 2016)

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1. Simplify. $6\sqrt{28} - 4\sqrt{7}$

2. Simplify completely. $\sqrt{3}(\sqrt{21} + 2\sqrt{3})$

3. Simplify. $\frac{4x^8 \cdot y^5}{-8x^6y^4}$

4. Divide $\frac{\sqrt{7}\sqrt{14}}{\sqrt{2}}$

5. Simplify $3(4x^3y^5)^2$

6. Simplify completely. $(2x^2 - 3x - 1) - (-5x^2 - 7x + 9)$

7. **Multiply.** $(x - 1)(x^2 + x + 1)$

8. **Simplify completely.** $\frac{9xy + 6y^2 - 3y}{3y}$

9. **Factor Completely.** $32a^2b - 50b^3$

10. **Factor the polynomial.** $3x^2 - 8x - 35$

11. **Factor the polynomial.** $21ab + 14ax - 15by - 10xy$

12. If n represents a number, what is the correct translation of the sentence?
Seven less than 3 times a number is two.

13. Solve for x . $\frac{3x-1}{6} + \frac{1}{2} = \frac{2}{3}$

14. Solve for m . $5(1 - m) = 3(m - 1)$

15. What is the value of the y -coordinate of the solution to the system of equations?

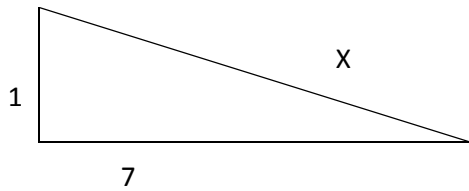
$$\begin{cases} 3x + y = 1 \\ -3x + 2y = -7 \end{cases}$$

16. Solve for h . $A = 3h + 5g$

17. Find all solutions to the equation. $6x - 15x^2 = 0$

18. Find all solutions to the equation. $2y^2 - 5 = 27$

19. What is the value of x in the right triangle?



20. Solve and graph. $x + 5 \leq 3x - 1$

21. Evaluate $3x^2 - 5xy + 2y^2$ for $x = -1$ and $y = 4$

22. Graph. $2x - 5y = -10$

23. Find the equation of the line passing through the points $(0, 6)$ and $(-3, 0)$. Write the equation in slope-intercept form.

24. Find the equation of the horizontal line passing through the point $(1, 3)$.

25. Find the slope and y-intercept for the graph of the equation.

$$3x - y = 6$$

1. Simplify. $2\sqrt{20} - 8\sqrt{5}$

2. Simplify completely. $\sqrt{11}(\sqrt{44} + \sqrt{11})$

3. Simplify. $\frac{\sqrt{33} \sqrt{12}}{\sqrt{11}}$

4. Simplify. $\frac{-18(y^7)^3 x^5}{3 y^{10} y^7 x}$

5. Simplify. $(7a^5 b^6)^2$

6. Simplify completely. $(5a^2 - ab + b^2) - (8a^2 + 5ab - 7b^2)$

7. Multiply. $(3x - 2)(x^2 + x - 5)$

8. Simplify completely.
$$\frac{-18a^3b^3 + 24a^2b^2 - 6ab}{-6ab}$$

9. Factor Completely. $18x^4y^2 - 98x^2$

10. Factor the polynomial. $5x^2 - 26x + 21$

11. Factor the polynomial. $21ab - 14ax - 15by + 10xy$

12. If n represents a number, what is the correct translation of the sentence?
Five more than a number n is 2 less than twice the number n .

13. Solve for x . $\frac{x-3}{2} + \frac{1}{8} = \frac{5}{8}$

14. Solve for n . $-2(n-4) = 5(4-n)$

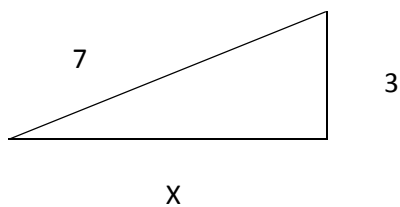
15. What is the value of the y -coordinate of the solution to the system of equations?

$$\begin{cases} -5a + 2b = 9 \\ 5a - b = -7 \end{cases}$$

16. Solve for y . $3x + 5y = 6$

17. Find all solutions to the equation. $2x^2 = 18x$

18. What is the value of x in the right triangle?



19. Solve and graph. $-x + 7 > 2x - 5$

20. If $a = 4$ and $b = -3$ Evaluate the following expression $4a^2 - 2ab - b^2$

21. Graph. $-3y + x = -6$

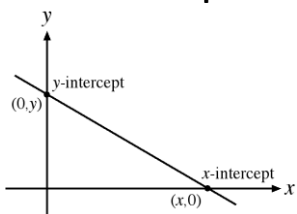
22. Find the equation of the line passing through the points $(-1, 5)$ and $(3, -3)$. Write the equation in slope-intercept form.

23. Find the equation of the horizontal line and vertical line passing through the point $(-5, 6)$.

24. Find the slope and y-intercept for the graph of the equation.

$$3x - y = 6$$

25. What is the slope of a straight line whose x-intercept is $(6, 0)$ and y-intercept is $(0, 4)$?





1. Simplify. $-3\sqrt{20} + 2\sqrt{45}$

2. Simplify completely. $\frac{7\sqrt{2}\sqrt{42}}{\sqrt{7}}$

3. Simplify. $\sqrt{3}(\sqrt{12} + \sqrt{5})$

4. Simplify $(-2ab^4)(3a^2b)(5b^2)$

5. Simplify completely. $(3x^2 + 5x - 2) - (-4x^2 + x - 7)$

6. Multiply. $(2x - 7)(x^2 - 3x + 4)$

7. Simplify completely. $\frac{16a^4 - 8a^3b + 4a^2}{-4a^2}$

8. Factor Completely.

$$12a^2 - 75b^2$$

9. Factor the polynomial.

$$3x^2 + 16x - 35$$

10. Factor the polynomial.

$$15ax + 10bx - 3ay - 2by$$

11. If n represents a number, what is the correct translation of the sentence?

30 subtracted from 7 times a number is 4.

12. Solve for X .

$$17 - 3x = -2(x - 5)$$

13. What is the value of the y-coordinate of the solution to the system of equations?

$$\begin{cases} 3x + y = 7 \\ -2x + 3y = -12 \end{cases}$$

14. Solve for W .

$$2L + 3W = P$$

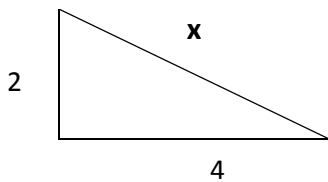
15. Find all solutions to the equation.

$$y^2 - 6 = y$$

16. Find all solutions to the equation.

$$3y^2 = 75$$

17. What is the value of x in the right triangle?



18. Solve and graph.

$$-2x + 3 > 5x - 11$$

19. Graph.

$$5x - 3y = -15$$

20. Simplify $x^3 y^{-5} x^{-1} y^2$

21. Find the equation of the line passing through the points (2, -5) and (-2, 3). Write the equation in slope-intercept form.

22. Find the equation of the horizontal line passing through the point (2, -1).

23. Find the slope and y-intercept for the graph of the equation.

$$3x - 2y = 6$$

24. Find the slope of the straight line whose x-intercept and y-intercept are (2, 0) and (0, -4) respectively.

25. Solve for $\frac{x-3}{2} + \frac{x+2}{3} = \frac{1}{6}$

1. Simplify. $\sqrt{27} - 2\sqrt{48}$
2. Simplify completely. $\frac{\sqrt{15}\sqrt{21}}{\sqrt{5}}$
3. Multiply $\sqrt{3}(\sqrt{3} + 3\sqrt{5})$
4. Simplify. $(4m^3n)(-5m^2n^6)$
5. Simplify. $y^{-7}y^2$
6. Simplify completely. $(-7y^2 + y - 8) - (5y^2 + 8y - 11)$
7. Multiply. $(4y - 1)(y^2 + 3y - 5)$

8. Simplify completely. $\frac{30x^9 + 8x^7 - 2x^5}{-2x^5}$

9. Factor Completely. $45m^4 - 5m^2n^2$

10. Factor the polynomial. $3x^2 - 10x - 8$

11. Factor the polynomial. $6mx - 3nx - 4my + 2ny$

12. If n represents a number, what is the correct translation of the sentence?
15 is 12 less than 2 times a number.

13. Solve for x . $\frac{3x}{4} + \frac{1}{2} = \frac{5}{8}$

14. Solve for x . $2(5 - 3x) = -3(x - 2)$

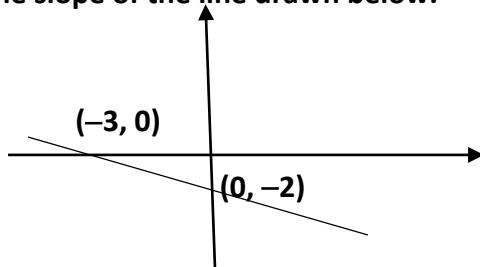
15. What is the value of the y-coordinate of the solution to the system of equations?

$$\begin{cases} -4y + x = -5 \\ 3y + 5x = 21 \end{cases}$$

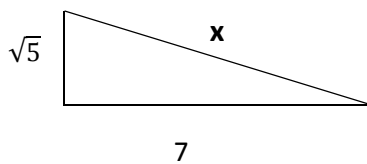
16. Solve for s. $v = 5s - 2t$

17. Find all solutions to the equation. $m^2 - 4m = 32$

18. Find the slope of the line drawn below.



19. What is the value of x in the right triangle?



20. Solve and graph. $-2x + 1 \leq 5x - 6$

21. Calculate $-x^2 + 7xy + 5y^2$ for $x = -3$ and $y = 2$

22. Graph. $4x + 9y = -36$

23. Find the equation of the line passing through the points (1, -5) and (4, 7). Write the equation in slope-intercept form.

24. Find the equation of the vertical line and horizontal line passing through the point (5, -6).

25. Find the slope and y-intercept for the graph of the equation.
 $5x - 3y = 9$