

Kennebec Valley Community College

Elementary Algebra

Self-Assessment Exam

1. **In which quadrant does the point (-3, -4) lie?**
 - a. Quadrant I
 - b. Quadrant II
 - c. Quadrant III
 - d. Quadrant IV

2. **$(3x + 2)(3x + 2)$ is the factored expression of which trinomial?**
 - a. $9x^2 + 4$
 - b. $9x^2 + 6x + 4$
 - c. $9x^2 + 12x + 4$
 - d. $9x^2 + 36x + 4$

3. **If $4(3x + 2) - (x + 5) = -3$ then $x = ?$**
 - a. $11/6$
 - b. $-11/6$
 - c. $6/11$
 - d. $-6/11$

4. **$(3x^3y)^3 = ?$**
 - a. $9x^9y^3$
 - b. $9x^6y^3$
 - c. $27x^9y^3$
 - d. $27x^6y^3$

5. **$(x - 2)$ is a factor of which polynomial?**
 - I. $x^2 - 4x + 4$
 - II. $x^2 + x - 6$
 - a. I only
 - b. II only
 - c. I and II
 - d. neither

6. **$\frac{2}{2/x + 2/y} = ?$**
 - a. $\frac{x + y}{xy}$
 - b. $\frac{xy}{x + y}$
 - c. $x + y$
 - d. $\frac{x + y}{4}$

7. **$x = |-4-5|$ $y = |-4-(-5)|$ $z = |-4| - |-5|$
Which is true about x , y , and z ?**
 - a. $x < z$
 - b. $z < y$
 - c. $x = z$
 - d. $y = z$

8. **$\frac{3x}{2y} \cdot \frac{8y^2}{27x} = ?$**
 - a. $4y/3$
 - b. $4y/9$
 - c. $4y/3x$
 - d. $4y/9x$

9. **$M - 9 = 1$** All of the following mean the same as the given equation except:

- a. M is one more than nine
- b. M is nine more than one
- c. One is nine less than M
- d. Nine is M less than one

10. **Solve for x and y:**

$$2x + y = 3$$

$$x - 3y = 12$$

- a. (3, 9)
- b. (3, -9)
- c. (3, -3)
- d. (3, 3)

11. **M is 8 more than a second number. Which of the following represents the second number?**

- a. $M - 11$
- b. $M - 8$
- c. $M + 8$
- d. $M + 17$

12. **Which pair of equations does NOT have a common solution?**

a. $x + y = -1$
 $4x - 3y = 24$

b. $4x + 6y = 12$
 $6x + 9y = 12$

c. $2x - 3y = -4$
 $2x + y = 4$

d. $5x - 4y = 9$
 $x - 2y = -3$

13. **$24x - 8 = ?$**

- a. $8x$
- b. $8(3x - x)$
- c. $8(3x - 1)$
- d. $8(3x - 8)$

14. **$(2x - 5y)^2 = ?$**

- a. $4x^2 - 25y^2$
- b. $4x^2 - 10xy + 25y^2$
- c. $4x^2 + 20xy - 25y^2$
- d. $4x^2 - 20xy + 25y^2$

15. **$(9 - 7) - (7 - 9) = ?$**

- a. 0
- b. 4
- c. -4
- d. -14

16. **$(5\sqrt{3x})^2 = ?$**

- a. $15x^2$
- b. $45x^2$
- c. $75x^2$
- d. $75x$

17. $\frac{4x}{5} - \frac{2x}{3} + \frac{x}{2} = ?$

- a. $3x/30$
- b. $x/10$
- c. $19x/30$
- d. $19/30$

18. Which of the following is equal to $x^2 - 10x + 24$?

- a. $(x - 4)(x + 6)$
- b. $(x + 4)(x - 6)$
- c. $(x - 4)(x - 6)$
- d. $(x + 4)(x + 6)$

19. $\frac{3x^2 - 15x}{3x} = ?$

- a. $x - 5x$
- b. $x - 5$
- c. $x^2 - 5x$
- d. $x^2 - 5$

20. Which of the following equals $12x$?

- a. $6x \cdot 6x$
- b. $13x^2 - x$
- c. $-8x + 20x$
- d. $12 + x$

21. If $x^2 + m - 6y^2 = (x + 3y)(x - 2y)$ then $m = ?$

- a. xy
- b. $-xy$
- c. $5xy$
- d. $-5xy$

22. $(-1)^4 = ?$

- a. 4
- b. -4
- c. 1
- d. -1

23. $\frac{4}{3x} \cdot \frac{3}{2x} = ?$

- a. $12/6x^2$
- b. $2/x^2$
- c. $2/x$
- d. 2

24. $\frac{2x^2}{3y} \cdot \frac{y^3}{8x} = ?$

- a. $xy^2/12$
- b. $xy^3/12$
- c. $x^2y^3/12$
- d. $x^2y/12$

25. Which of the following statements represents this equation? $x/3 - 5 = 8$

- a. One-third a number x less than five equals eight
- b. Five minus one-third a number x equals eight
- c. Five less than one-third a number x equals eight
- d. Eight is one-third a number x less than 5

26. If $x = 5$ and $y = 3$ then $\frac{2x - 3y}{x - y} = ?$
- a. $19/2$
 - b. $1/8$
 - c. $1/2$
 - d. $19/8$
27. Which is NOT between -1 and 1?
- a. $-5/6$
 - b. $7/8$
 - c. $-1/2$
 - d. $3/2$
28. Which is the correct factored form of $24x^2 - 2x - 15$?
- a. $(4x - 3)(6x + 5)$
 - b. $(4x + 3)(6x - 5)$
 - c. $(4x - 3)(6x - 5)$
 - d. $(4x + 3)(6x + 5)$
29. $(-3)(-1) + (4)(-3) / (-2) = ?$
- a. -3
 - b. $9/2$
 - c. 9
 - d. 15
30. $\sqrt{64x^8y^6z^4} = ?$
- a. $8x^8y^6z^4$
 - b. $8x^4y^3z^2$
 - c. $8\sqrt{x^8y^6z^4}$
 - d. $128x^{16}y^{12}z^8$

**ELEMENTARY ALGEBRA
SELF-ASSESSMENT EXAM
KEY**

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