<u>**Name**</u>   **Practice Exam**   <u>**Form 1**</u>

Directions: Choose the one best answer for each item.

1.   Simplify: $8-4\div2-10\div2$

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

2.   Simplify: $12-(-3)^2\div(7-4)$

a) 1   b) 7   c) 9   d) 15

3. $|-8|-|-5|=$

a) -13   b) -3   c) 3   d) 13

4.   Simplify: $-2\left[x+9(x+1)\right]$

a) $20x+18$ b) $20x+2$ c) $-20x-2$ d) $-20x-18$

5.   Evaluate the given expression when $a=-3,\ b=2,\ \text{and}\ c=-1.$

$$2ab-c$$

a) 13   b) 11   c) -11   d) -13

6.   Solve for x: $2(3x+5)=5x-11$

a) $x=-21$ b) $x=-16$ c) $x=-\dfrac{21}{11}$ d) $x=-1$

7. Solve for x: $\dfrac{1}{2}x + 6 = 3 + 2x$

a) $x = 3$ b) $x = 2$ c) $x = 0$ d) $x = -3$

8. Solve for y: $3x + 4y = 12$

a) $y = 12 - 3x$ b) $y = \dfrac{3x - 12}{4}$ c) $y = 3 - 3x$ d) $y = \dfrac{12 - 3x}{4}$

9. Solve: $2x + 1 < 3x + 4$

a) $x < 3$ b) $x > 3$ c) $x < -3$ d) $x > -3$

10. The sum of a number and 6 is 8 more than twice the number. Find the equation that could be used to find this number, x.

a) $x + 6 = 2x + 8$ b) $x + 6 = x^2 + 8$ c) $x + 6 = 2(x + 8)$ d) $6x = 2x + 8$

11. The length of a rectangle is 2 feet more than the width. The perimeter of the rectangle is 20 feet. Find the length.

a) 4 feet   b) 6 feet   c) 9 feet   d) 11 feet

12. Identify the proportion listed below that solves this problem.

A car can travel 189 miles on 9 gallons of gasoline. How far can the car travel on 13 gallons?

a) $\dfrac{9}{189} = \dfrac{x}{13}$ b) $\dfrac{189}{9} = \dfrac{x}{13}$ c) $\dfrac{189}{13} = \dfrac{x}{9}$ d) $\dfrac{189}{x} = \dfrac{13}{9}$

13. Simplify: $\dfrac{5x^2 y}{x^3}$

a) $5x^5 y$ b) $\dfrac{5y}{x}$ c) $5xy$ d) $\dfrac{5x}{y}$

14. Simplify: $\dfrac{x^{-3} y^6}{x^{-4} y^4}$

a) xy^2 b) $\dfrac{y^2}{x}$ c) $\dfrac{y^2}{x^7}$ d) $x^7 y^2$

15. Simplify: $\dfrac{a^{-2} b^{-1} c^2}{a^3 b^0 c}$

a) $\dfrac{c}{a^5 b}$ b) $\dfrac{c}{a^5}$ c) $\dfrac{a^5 c}{b}$ d) $\dfrac{bc}{a^5}$

16. Convert to standard form: 7.96×10^{-2}

a) 0.00796   b) 0.0796   c) 796   d) 7,960

17. Convert to scientific notation: 650,000

a) 65×10^4 b) 6.5×10^5 c) 6.5×10^{-5} d) 0.65×10^6

18. Simplify: $\left(3x^2 - 4x + 8\right) + \left(2x^2 + 5x - 12\right)$

a) $5x^2 + x - 4$ b) $5x^4 - x^2 - 4$ c) $6x^4 + x^2 + 4$ d) $6x^2 - 20x + 96$

19. Simplify: $\left(x^2+2x-5\right)-\left(4x^2-3x-1\right)$

    a) $-3x^4+5x^2-4$ b) $-3x^2+5x-4$ c) $-3x^2+5x-6$ d) $-3x^2-x-6$

20. Simplify: $4x^3\left(2x^2-7\right)$

    a) $8x^5-28x^3$ b) $8x^6-7$ c) $6x^5-28x^3$ d) $8x^6-28x^3$

21. Simplify: $\left(2x+5\right)\left(x+9\right)$

    a) $3x^2+23x+14$ b) $3x^2+23x+45$ c) $2x^2+14x+45$ d) $2x^2+23x+45$

22. Simplify: $\left(2x-7\right)\left(2x+7\right)$

    a) $4x^2-49$ b) $2x^2-49$ c) $4x^2+49$ d) $4x^2+28x-49$

23. Factor completely: $4x^4-8x^3-4x^2+16x$

    a) $4x\left(x^3-2x^2-x+4\right)$ b) $4x\left(x^4-2x^3-x^2+4x\right)$

    c) $4x\left(x^3-2x^2+x-4\right)$ d) $4x\left(x^4-2x^3-x^2+4\right)$

24. Factor completely: $4x^2-9$

    a) $\left(2x^2+3\right)\left(2x^2-3\right)$ b) $\left(2x+3\right)\left(2x-3\right)$ c) $\left(2x+1\right)\left(2x-9\right)$ d) $\left(2x-3\right)\left(2x-3\right)$

25. Factor completely: $x^2-4x+2xy-8y$

    a) $\left(x+4\right)\left(x+2y\right)$ b) $\left(x+4\right)\left(x-2y\right)$ c) $\left(x-4\right)\left(x+2y\right)$ d) $\left(x-4\right)\left(x-2y\right)$
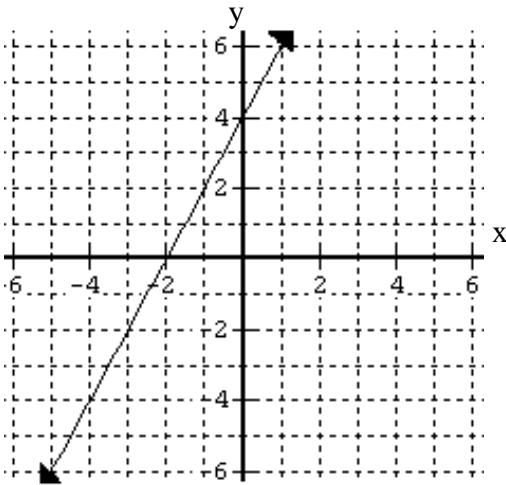
26. Identify a factor of the following trinomial: $x^2 - 9x + 20$

a) $(x+5)$ b) $(x+4)$ c) $(x-5)$ d) $(x-10)$

27. Identify a factor of the following trinomial: $5x^2 - 9x - 2$

a) $(5x+2)$ b) $(5x+1)$ c) $(x+2)$ d) $(x+1)$

28. Simplify: $\dfrac{x^2 - 4x + 3}{1 - x}$

a) $-x+3$ b) $-x+1$ c) $x-3$ d) $x+3$

29. Solve: $x^2 - 5x + 6 = 0$

a) $x=2, \quad x=3$ b) $x=-2, \quad x=-3$ c) $x=1, \quad x=6$ d) $x=-1, \quad x=6$

30. Solve: $3a^2 + 14a + 8 = 0$

a) $a = -\dfrac{2}{3}, \quad a = -4$ b) $a = \dfrac{2}{3}, \quad a = 4$ c) $a = -\dfrac{3}{2}, \quad a = -4$ d) $a = -\dfrac{4}{3}, \quad a = -2$

31. Assuming the variable represents a non-negative number, simplify completely: $\sqrt{18x^3}$

a) $3x\sqrt{2x}$ b) $6x\sqrt{3x^2}$ c) $9x\sqrt{2x}$ d) $3\sqrt{6x^3}$

32. Simplify: $\sqrt{50} + \sqrt{18}$

a) 30 b) $8\sqrt{2}$ c) $15\sqrt{2}$ d) 16

33. Simplify: $\sqrt{3}\left(\sqrt{3} + \sqrt{6}\right)$

a) $6\sqrt{2}$ b) 9 c) $3 + 3\sqrt{2}$ d) 21
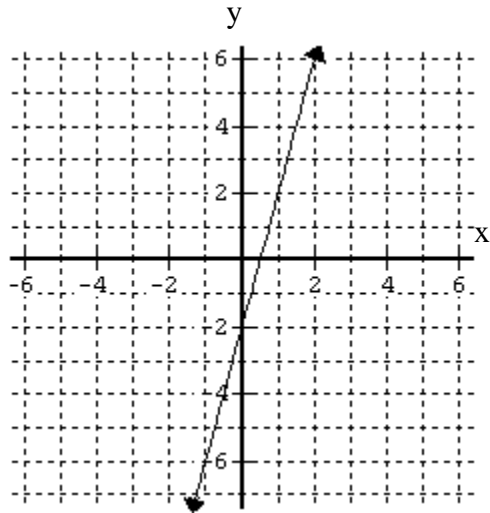
34. Find the *y*-intercept for: $x + 3y = 7$

a) $\left(0, \dfrac{7}{3}\right)$ b) $(0,7)$ c) $\left(7, \dfrac{7}{3}\right)$ d) $(7,0)$

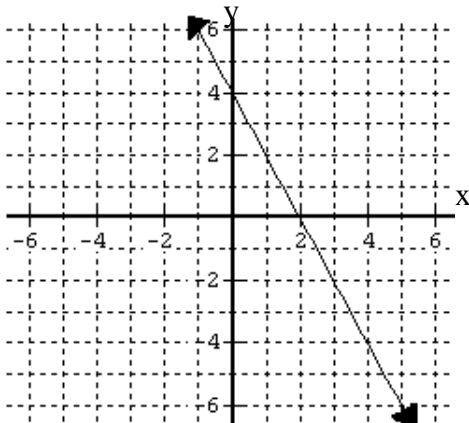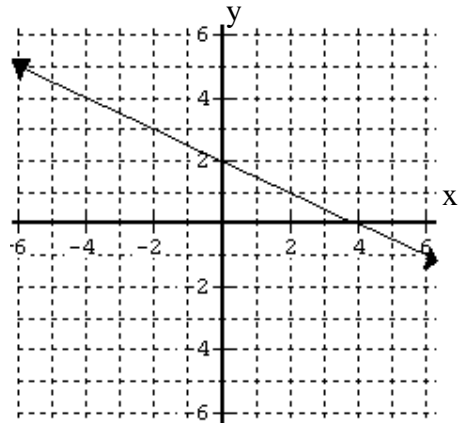35. Find the graph that best matches the given linear equation: $2x + y = 4$

a)

c)

b)

d)

ANSWER KEY

1. b	2. c	3. c	4. d	5. c	6. a	7. b	8. d	9. d	10. a
11. b	12. b	13. b	14. a	15. a	16. b	17. b	18. a	19. b	20. a
21. d	22. a	23. a	24. b	25. c	26. c	27. b	28. a	29. a	30. a
31. a	32. b	33. c	34. a	35. b					