CUNY Elementary Algebra Final Exam Practice
Form F Name_____

1. Simplify.

$$3\sqrt{80} + 2\sqrt{5}$$

A) $6\sqrt{5}$
B) $14\sqrt{5}$
C) $10\sqrt{5}$
D) $5\sqrt{14}$

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2. Simplify Completely.

$$\frac{\sqrt{3}\,\sqrt{48}}{\sqrt{6}}$$

A) $2\sqrt{6}$
B) $3\sqrt{8}$
C) $4\sqrt{6}$
D) $6\sqrt{2}$

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3. Simplify Completely.

$$\sqrt{3}(\sqrt{3} + \sqrt{7}\,)$$

A) $\sqrt{3} + \sqrt{21}$
B) $9 + \sqrt{21}$
C) $3 + \sqrt{21}$
D) $3 + \sqrt{7}$

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4. Simplify.

$$\frac{u^5 v^4}{u^{-2} v^4}$$

A) u^3
B) u^7
C) $u^7 v$
D) $u^3 v$

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5. Simplify completely.

$$(8x^2 + 7x - 2) - (-5x^2 + 6x - 4)$$

A) $3x^2 + 13x - 6$
B) $3x^2 - x + 2$
C) $13x^2 + x + 2$
D) $13x^2 - x - 6$

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6. Multiply.

$$(3x - 6)(2x^2 - 3x - 7)$$

A) $6x^3 - 21x^2 - 3x + 42$
B) $6x^3 - 3x^2 - 39x + 42$
C) $6x^3 + 42$
D) $6x^3 + 21x^2 + 3x - 42$

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7. Simplify completely.

$$\frac{24x^8 + 16x^6 - 4x^3}{-4x^3}$$

A) $-6x^5 - 4x^3$
B) $-6x^5 - 4x^3 + 1$
C) $-6x^5 + 4x^3 - 1$
D) $-6x^5 + 4x^3$

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8. Factor *completely*.

$$75x^3y^2 - 108x^5$$

A) $3(25x^3y^2 - 36x^5)$
B) $3x^3(25y^2 - 36x^2)$
C) $3x^3(5y - 6x)^2$
D) $3x^3(5y - 6x)(5y + 6x)$

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9. Which of the following is a factor of the polynomial?

$$4z^2 + 5z - 6$$

A) $z - 2$
B) $4z - 3$
C) $4z + 3$
D) $3z + 4$

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10. Which of the following is a factor of the polynomial?

$$21x^2 + 6xy - 49x - 14y$$

A) $7x - 2y$
B) $3x + 2y$
C) $3x + 7$
D) $7x + 2y$

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

5 times 13 less than a number is 20.

A) $5n - 13 = 20$
B) $5(n - 13) = 20$
C) $13 - 5n = 20$
D) $5(13 - n) = 20$

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12. Solve for x.

$$-12x + 28 = -2(4x - 6)$$

A) $x = 2$
B) $x = -2$
C) $x = 4$
D) $x = -4$

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

$$7x + 10y = 13$$
$$4x + 5y = 6$$

A) $x = -1$
B) $x = 2$
C) $x = 1$
D) $x = -2$

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14. Solve for n.

$$R = Pn + C$$

A) $n = \frac{R-C}{P}$
B) $n = \frac{C-R}{P}$
C) $n = \frac{R}{P} - C$
D) $n = P(R - C)$

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15. Find all the solutions to the equation.

$$x^2 + 3x = 18$$

A) $x = 3 \; or \; x = 6$
B) $x = -6 \; or \; x = -3$
C) $x = -6 \; or \; x = 3$
D) $x = -3 \; or \; x = 6$

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16. Solve for x.

$$\frac{2x}{5} + \frac{1}{2} = \frac{7}{10}$$

A) $\mathrm{x} = -\frac{1}{2}$
B) $x = 2$
C) $x = \frac{1}{2}$
D) $x = -2$

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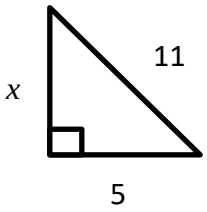
17. What is the value of x in the right triangle?



A) 12
B) $4\sqrt{6}$
C) $16\sqrt{6}$
D) $2\sqrt{6}$

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18. Find the solution to the inequality.

$$3x - 3 \leq 7x + 17$$

A) $x \geq -5$
B) $x \geq 5$
C) $x \leq -5$
D) $x \leq 5$

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19. Given $a = 2$ and $b = -1$, evaluate the expression given below.

$$a^2b - ab + b^2$$

A) -1
B) 7
C) 1
D) -5

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20. Which of the following are the intercepts of the graph of the equation?

$$4x - 5y = 20$$

A) $(-5,0), (0,4)$
B) $(4,0), (0,-5)$
C) $(-4,0), (0,5)$
D) $(5,0), (0,-4)$

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21. Find the equation of the line passing through the points $(-5,1)$ and $(2,-6)$. Write the equation in slope-intercept form.

A) $y = x - 4$
B) $y = x - 6$
C) $y = -x - 4$
D) $y = -x - 6$

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22. Find the equation of the horizontal line passing through the point $(-7,-8)$.

A) $y = -8$
B) $x = -7$
C) $y = x - 8$
D) $y = \frac{8}{7}x$

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

$$5x - 9y = 27$$

A) Slope = $\frac{9}{5}$ and y-intercept = $(0,27)$
B) Slope = $-\frac{9}{5}$ and y-intercept = $(0,27)$
C) Slope = $-\frac{5}{9}$ and y-intercept = $(0,-3)$
D) Slope = $\frac{5}{9}$ and y-intercept = $(0,-3)$

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24. Simplify.

$$x^{-9}x^{3}$$

E) $\frac{1}{x^3}$
F) $\frac{1}{x^6}$
G) $-x^6$
H) x^6

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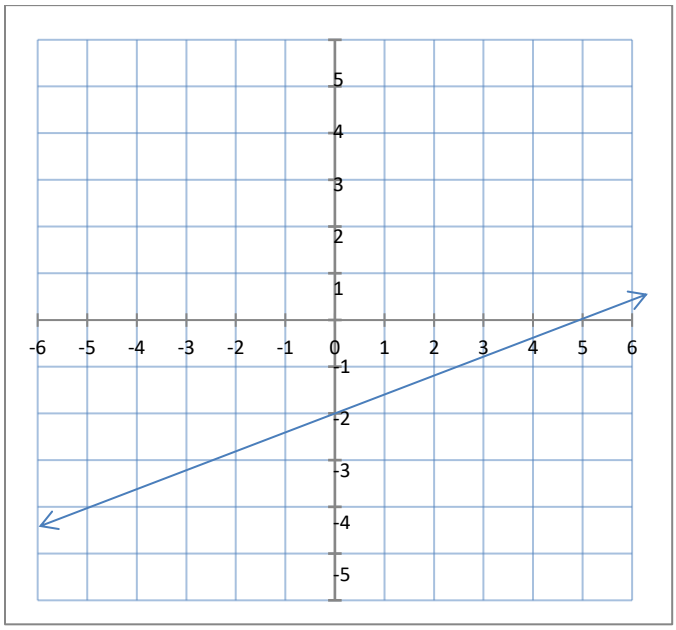
25. What is the slope of the line graphed below?



A) $\frac{5}{2}$
B) $\frac{2}{5}$
C) $-\frac{5}{2}$
D) $-\frac{2}{5}$