Trimester 3 Review A

Alg 1CP

Do not write on this paper. Do work and write answers in your spiral. Return this paper to your teacher.

Write an algebraic expression or equation.

1. *7 less than the product of 2 and a number cubed* $2x^3 - 7$

2. *10 increased by 5 times a number is 4 times the number plus 12.* $10 + 5x = 4x + 12$

Evaluate.

3. $-a^2 - b^2$ when $b = -2$, $a = -5$ -29

4. $a^2 - (b^3 - 4c)$ when $a = -7$, $b = -3$ and $c = 5$ 96

Simplify.

5. $7^3 - \frac{2}{3}(13 \cdot 6 + 9)4$ 111

6. $2(x - 8) - (x - 7)$ $x - 9$

Solve.

7. $-9 - \frac{y}{4} = 5$ -56

8. $\frac{1}{6}(x - 4) = \frac{1}{3}(2x + 4)$ $x = -4$

9. $-8x > 24$ or $2x - 5 > 17$ $\{x < -3 \text{ or } x > 11\}$

10. $7 \le 6 - 4y \le 8$ $\{-\frac{1}{2} \le y \le -\frac{1}{4}\}$

11. *Graph* $3x + 2y = 6$ *by finding the x-intercept and the y-intercept.* $y = -\frac{3}{2}x + 3$ (x-int. = 2, y-int. = 3)

12. *Rewrite* $3x + 4y = 16$ in slope-intercept form and then **graph.** $y = -\frac{3}{4}x + 4$

13. *Graph* $y = 3$

14. *Graph* $x = -2$

Find the slope of the line that passes through the given points.

15. (2, 4) and (-1, 5) $-\frac{1}{3}$

16. (-4, 7) and (-4, 12) undefined

17. (-6, -3) and (9, -3) 0

Write an equation in slope-intercept form of the line that:

18. passes through points (6, -4) and (2, 8) $y = -3x + 14$

19. has a slope of -8 and a y-intercept of 12 $y = -8x + 12$

20. is perpendicular to $y = 2x + 1$ and passes through the point (2, 5). $y = -\frac{1}{2}x + 6$

21. is parallel to $y = -9x - 3$ and passes through the point (0, -5). $y = -9x - 5$

Solve the linear system using the substitution method.

22. $-2x + y = 3$, $y = 4x - 1$ $(2, 7)$

23. $5a - b = 5$, $-4a + 5b = 17$ $(2, 5)$

Solve the linear system using the elimination method.

24. $-4x + 2y = 8$, $4x - 3y = -10$ $(-1, 2)$

25. $6x + 2y = 2$, $4x + 3y = 8$ $(-1, 4)$

Determine whether the linear system has no solution, one solution or infinitely many solutions.

26. $3x - 2y = 3$
$-6x + 4y = -6$
Infinitely many solutions

27. $3x + 2y = 40$
$-3x - 2y = 8$
NO solution

Solve.

28. $-|2x - 8| + 17 = 5$ $\{-2, 10\}$

Solve and then graph on a number line.

29. $3x + 1 < 4$ or $2x - 5 \geq 7$
$x < 1$ or $x \geq 6$

30. $-3 \leq -4 - x \leq 2$ $-1 \geq x \geq -6$

Graph the inequality

31. $y < -2x + 3$

32. $-2x + 4y \geq 8$

33. $y < 2$

Simplify.

34. $(2x^2y^3)^2 \cdot (3xy^2)$ $12x^5y^8$

35. $\dfrac{54x^9y^{-4}}{-9x^8y^{-2}}$ $\dfrac{-6x}{y^2}$

36. $\dfrac{y^{-2}}{x^2} \cdot \left(\dfrac{x^4}{y}\right)^{-1}$ $\dfrac{1}{x^6y}$

Add, subtract, or multiply to simplify.

37. $(3a^3 + 3 - 4a^2) - (3a^2 - a + a^3 - 4)$
$2a^3 - 7a^2 + a + 7$

38. $(-3a^2 + 5) + (-a^2 + 4a - 6)$ $-4a^2 + 4a - 1$

39. $(6x - 4)(6x + 4)$
$36x^2 - 16$

40. $(3x + 2)(x - 4)$ $3x^2 - 10x - 8$

Factor the expression.

41. $2x^2 - 10x + 8$
$2(x - 4)(x - 1)$

42. $2y^2 + 5y + 2$
$(y + 2)(2y + 1)$

43. $144x^2 - 25$ $(12x + 5)(12x - 5)$

Solve the equation or write no real solution. (Simplify radical solutions!)

44. $49x^2 - 64 = 0$ $\{8/7, -8/7\}$

45. $y^2 - 7 = 8$ $\sqrt{15}$

46. $x^2 + 3x = 10$ $\{-5, 2\}$

47. ***Solve*** $x^2 - 12x + 4 = 0$ *by completing the square.* $x = 6 \pm 4\sqrt{2}$

48. ***Solve*** $2x^2 + x - 2 = 0$ *by using the quadratic formula.* $x = \dfrac{-1 \pm \sqrt{17}}{4}$

49. ***Find the discriminant*** *of* $2x^2 - 2x + 3 = 0$. -20

50. ***Graph*** *the equation* $y = x^2 + 2x - 3$ *by writing the equation in Completed Square (Vertex) form, finding the coordinates of the vertex, and completing a table of values.*

Simplify.

51. $3\sqrt{7} + \sqrt{7} - 6\sqrt{7}$ $-2\sqrt{7}$

52. $\sqrt{72} - \sqrt{18}$ $3\sqrt{2}$

53. $\dfrac{\sqrt{5}}{3 - \sqrt{5}}$ $\dfrac{3\sqrt{5} + 5}{4}$

54. $\sqrt{3}(5\sqrt{2} + \sqrt{3})$ $5\sqrt{6} + 3$

Solve.

55. $8\sqrt{x + 3} = 64$
$x = 61$

56. $\sqrt{2x - 12} + 9 = 4$
NO solution

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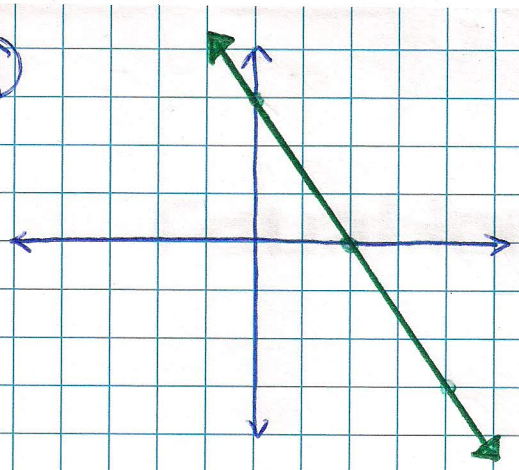

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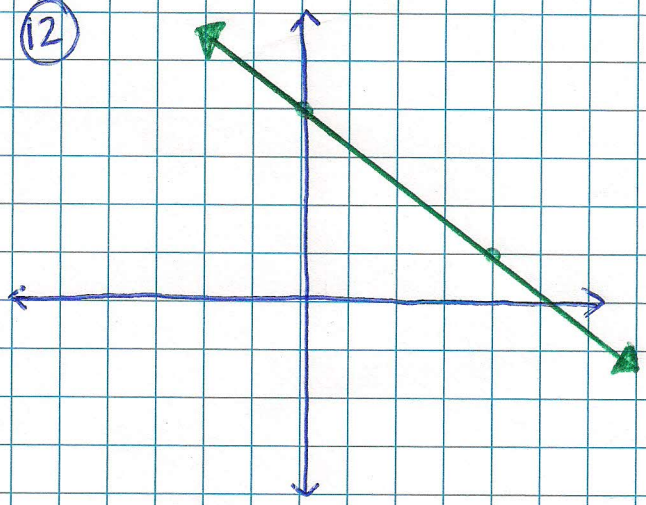

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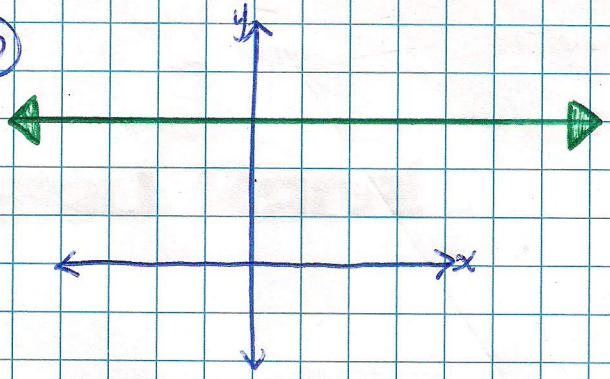

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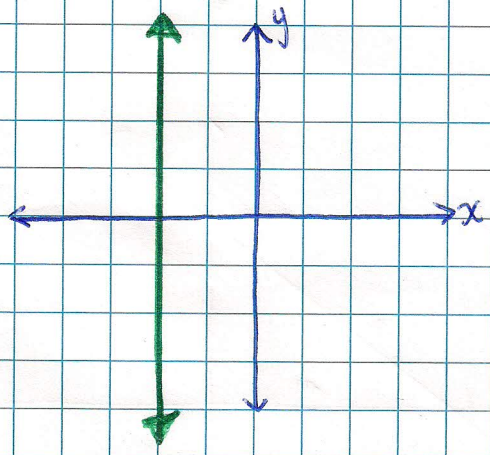

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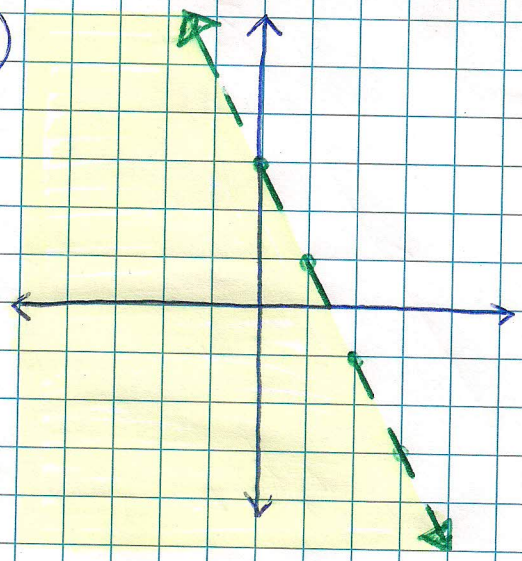

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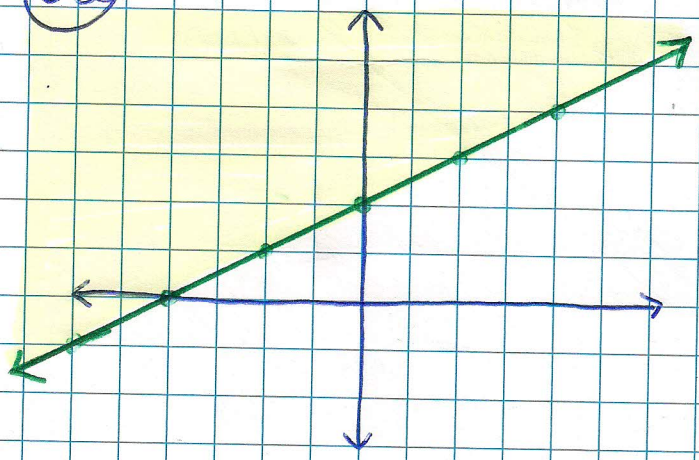

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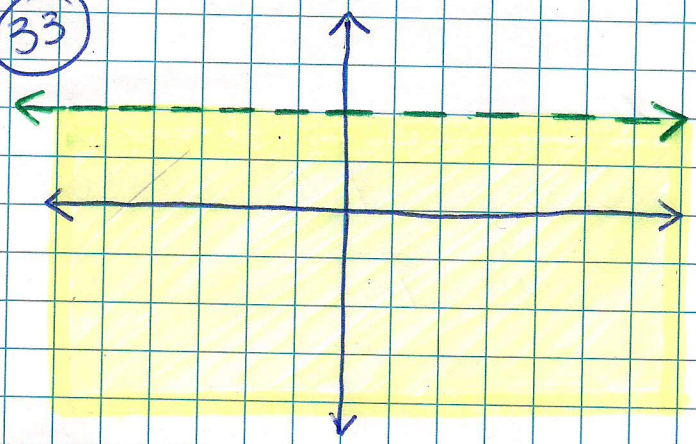

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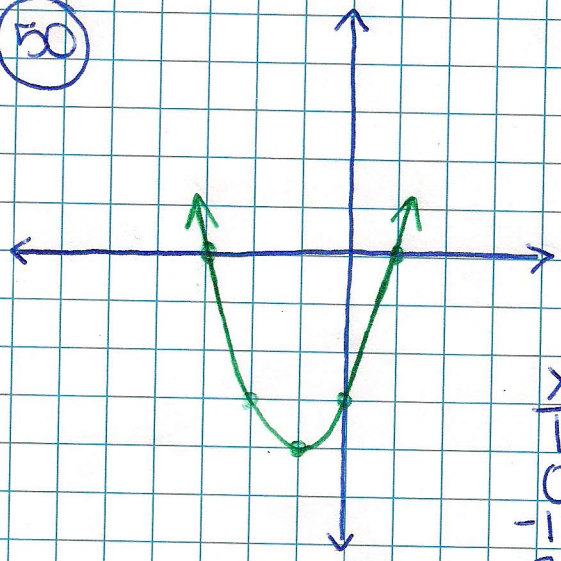

X	Y
1	0
0	-3
-1	-4
-2	-3
-3	0