

Algebra II pre-AP Summer Assignment Key

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

2. $|8-10|-2 = \boxed{0}$

3. $16 - 4 + 4 = \boxed{16}$

4. $2(6x - 5x + 5) = \boxed{2x + 10}$

5. a) x^{12}

b) x^{12}

c) x^{13}

d) x^7

e) $6x^{12}$

f) $9x^6$

6. a) $5\sqrt{2}$

b) $3\sqrt{2}$

c) $4\sqrt{3}$

d) $2\sqrt{6}$

e) $5\sqrt{10}$

f) $10\sqrt{10}$

7. 9^3 or 729

8. $\frac{y^2}{3x^3}$

9. a) $6x^2 - x - 2$

b) $2x^2 + 5x - 12$

10. $x + 4 + 2x^2 + 7x - 15 = 2x^2 + 8x - 11$

11. a) $3x^2 + 11x - 20$

b) $x^2 + 10x + 25$

c) $x^2 + 2x + 1$

d) $9x^2 - 30x + 25$

12. $\frac{3}{7} \cdot \frac{14}{9} = \boxed{\frac{2}{3}}$

$$13. \quad 4x - 10 = 6 \quad \text{or} \quad 4x - 10 = -6$$

$$4x = 16 \quad \quad \quad 4x = 4$$

$$\boxed{x = 4} \quad \quad \quad \text{or} \quad \quad \quad \boxed{x = 1}$$

$$14. \quad -|x+2| = -7$$

$$|x+2| = 7$$

$$x+2 = 7 \quad \quad \quad \text{or} \quad \quad \quad x+2 = -7$$

$$a) \quad \boxed{x = 5} \quad \quad \quad \text{or} \quad \quad \quad \boxed{x = -9}$$



$$15. \quad 4x - 6x + 15 = 16x$$

$$15 = 18x$$

$$\boxed{x = \frac{15}{18} = \frac{5}{6}}$$

$$16. \quad 2x - 8 - 4 = 3x + 21$$

$$\boxed{-33 = x}$$

$$17. \quad 2(-3y + 5) + 8y = 4$$

$$2y = -6 \quad \quad \quad x = -3(-3) + 5$$

$$y = -3 \quad \quad \quad x = 14$$

$$\boxed{(14, -3)}$$

$$18. \quad 6x - 10y = 42$$

$$2x + 10y = -26$$

$$8x = 16$$

$$x = 2$$

$$6 - 5y = 21$$

$$-5y = 15$$

$$y = -3$$

$$\boxed{2, -3}$$

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P. 2

19. Graph

20. Graph

21. Graph

22. Graph

23. $3x - 5y = 12$

$$-5y = -3x + 12$$

$$y = \frac{3}{5}x - \frac{12}{5}$$

$$5x + 3y = 20$$

$$3y = -5x + 20$$

$$y = -\frac{5}{3}x + \frac{20}{3}$$

since $\frac{3}{5} \cdot -\frac{5}{3} = -1$ they are perpendicular

24. $y = -\frac{5}{4}x + 10$

25. x -int: $-2x + 0 = 24$

$$x = -12$$

$$\therefore (-12, 0)$$

y -int: $0 + 3y = 24$

$$y = 8$$

$$(0, 8)$$

26. $y = mx + b$

$$-2 = \frac{1}{4}(8) + b$$

$$-4 = b$$

or

$$y + 2 = \frac{1}{4}(x - 8)$$

$$\therefore y = \frac{1}{4}x - 4$$

27. C

28. $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - -1}{2 - 3} = -5$ through $(2, 4)$

$$4 = -5(2) + b$$

$$14 = b$$

$$y = -5x + 14$$

29. $a^2 + 3a - 4 = (a + 4)(a - 1)$

30. $x^2 - 9x + 20 = (x - 4)(x - 5)$

31. $x^2 - 9 = (x + 3)(x - 3)$

32. $81a^2 - 25 = (9a + 5)(9a - 5)$

33. $(x + 3)(x - 5) = 0$

$$x = -3, x = 5$$

34. $x^2 - 3x - 18 = 0$

$$\frac{3 \pm \sqrt{9 - 4(1)(-18)}}{2} = \frac{3 \pm \sqrt{81}}{2} = \frac{3 \pm 9}{2} = 6, -3$$

35. $x^2 + 11x + 28 = 0$

$$\frac{-11 \pm \sqrt{121 - 4(1)(28)}}{2} = \frac{-11 \pm \sqrt{49}}{2} = \frac{-11 \pm 7}{2} = -7, -4$$

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p. 3

37. $3x^2 - 11x + 5 = 0$

$$\frac{11 \pm \sqrt{121 - 4(3)(5)}}{6} = \frac{11 \pm \sqrt{61}}{6}$$

36. $x^2 - 3x + 1 = 0$

$$\frac{3 \pm \sqrt{9 - 4}}{2} = \frac{3 \pm \sqrt{5}}{2}$$

38. $8x^2 + 3x - 1 = 0$

$$\frac{-3 \pm \sqrt{9 - 4(8)(-1)}}{16} = \frac{-3 \pm \sqrt{41}}{16}$$

39. $440 = 20 + 60n$

$$420 = 60n$$

$$n = 7 \quad \text{i.e.} \quad \boxed{7 \text{ days}}$$

40.

$$x + 2x + 2x + 5 = 60$$

$$5x + 5 = 60$$

$$5x = 55$$

$$x = 11$$

$\boxed{11 \text{ feet}}$

41. $x + 2x + 2 + 13 = 30$

$$3x + 15 = 30$$

$$\boxed{x = 5}$$

$$42. \quad 4x \cdot \boxed{\begin{array}{|c|} \hline \\ \hline \end{array}} \\ \quad \quad \quad 5x$$

$$A = l \cdot w$$

$$A = 4x \cdot 5x = \boxed{20x^2 \text{ unit}^2}$$

$$43. \quad \frac{7z^2 + 7z}{4z + 8} \cdot \frac{z^2 - 4}{z^2 + z}$$

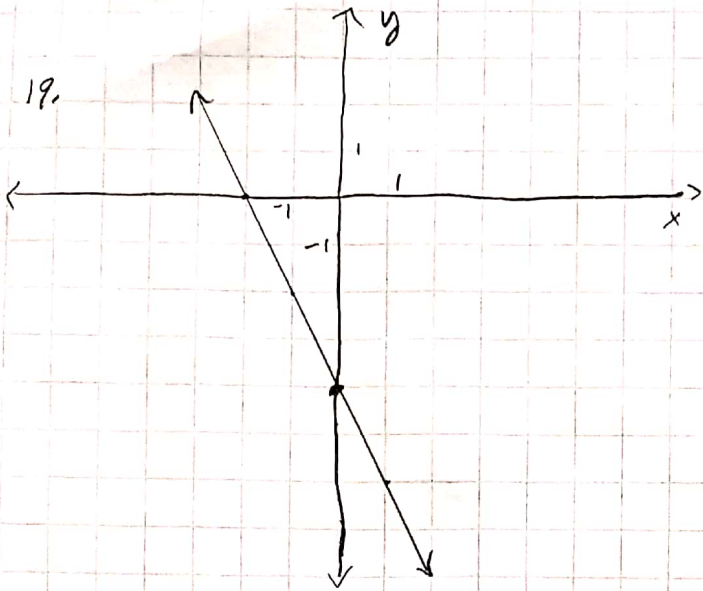
$$\frac{7z(z+1)}{4(z+2)} \cdot \frac{(z+2)(z-2)}{z(z+1)} = \boxed{\frac{7(z-2)}{4}}$$

$$44. \quad \frac{(x+4)(x-4)}{x-3} \cdot \frac{(x+3)(x-3)}{2(x+4)} = \boxed{\frac{(x+4)(x-3)}{2}}$$

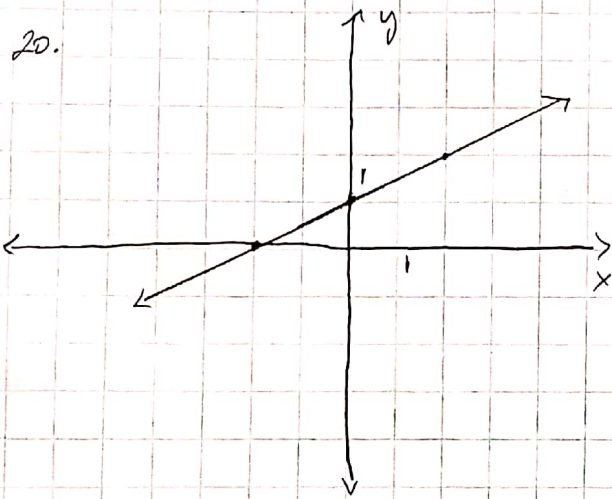
45. d

Summer Assignment
Graphs

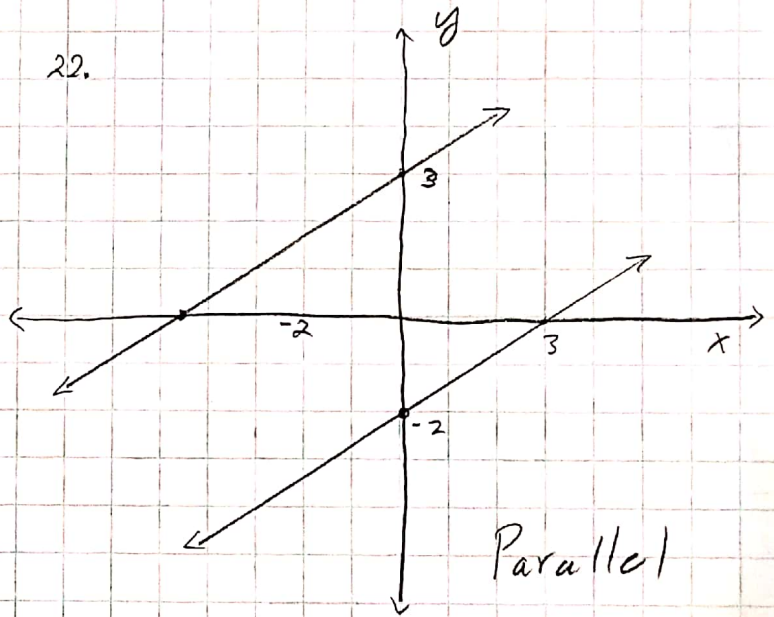
19.



20.



22.



Parallel

21.

