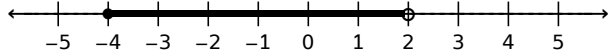


Algebra II Honors Summer Math Packet

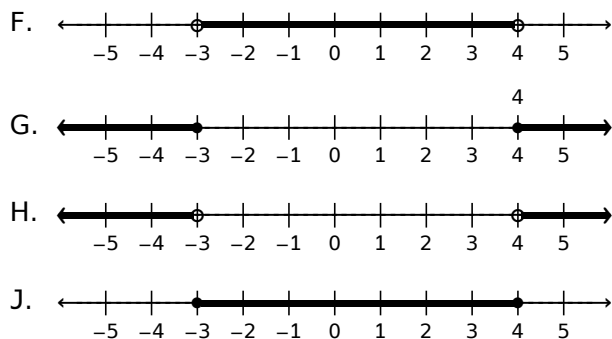
Name: _____

Date: _____

1. Solve for x : $3x + 6 = 5x + 12$
2. What is the value of p in the equation $8p + 2 = 4p - 10$?
F. 1 G. -1 H. 3 J. -3
3. Solve for x : $15x - 3(3x + 4) = 6$
A. 1 B. $-\frac{1}{2}$ C. 3 D. $\frac{1}{3}$
4. Solve for x : $3(x - 2) + 5 = 2(5x - 4)$
5. What is the value of x in the equation $4(2x + 1) = 27 + 3(2x - 5)$?
A. 21 B. 9 C. $7\frac{1}{2}$ D. 4
6. What is the value of x in the equation $13x - 2(x + 4) = 8x + 1$?
F. 1 G. 2 H. 3 J. 4
7. What is the value of x in the equation $\frac{3}{4}x + 2 = \frac{5}{4}x - 6$?
A. -16 B. 16 C. -4 D. 4
8. Which value of x is the solution of the equation $\frac{1}{7} + \frac{2x}{3} = \frac{15x - 3}{21}$?
F. 6 G. 0 H. $\frac{4}{13}$ J. $\frac{6}{29}$
9. Solve for x : $\frac{4}{6} = \frac{x}{15}$
10. Solve for x : $\frac{x + 1}{8} = \frac{11}{16}$

11. Solve for y : $\frac{4}{5y - 3} = \frac{2}{3y + 4}$
12. Solve for the positive value of x :
 $\frac{x - 3}{4} = \frac{4}{x + 3}$
13. Find the complete solution set of $|2x - 4| = 8$.
14. Solve for the negative value of x :
 $|2x + 5| + 1 = 13$
15. If x is a positive integer, then the solution set of $4x + 2 < 14$ is
A. {1} B. {1, 2}
C. {1, 2, 3} D. {1, 2, 3, 4}
16. Which inequality is represented in the accompanying graph?

F. $-4 < x < 2$ G. $-4 \leq x < 2$
H. $-4 < x \leq 2$ J. $-4 \leq x \leq 2$
17. What is the solution set of $|4x + 8| > 16$?
A. $\{x \mid -6 < x < 2\}$
B. $\{x \mid -2 < x < 6\}$
C. $\{x \mid x < -6 \text{ or } x > 2\}$
D. $\{x \mid x < -2 \text{ or } x > 6\}$

18. Which graph represents the solution set of $|2x - 1| < 7$?



19. Solve $|-4x + 5| > 13$ algebraically for x .

20. Simplify by combining like terms:
 $(5a + 3b) + 2(a - 3b)$

21. Find the sum of $4a^2 - 7a - 5$ and $-8a^2 - 2a + 7$.

22. The expression $(2x^2 + 6x + 5) - (6x^2 + 3x + 5)$ is equivalent to

- F. $-4x^2 + 3x$ G. $4x^2 - 3x$
 H. $-4x^2 - 3x + 10$ J. $4x^2 + 3x - 10$

23. Find the sum:
 $(9m - 5n + 2) + (-4m - n - 1) + (-5m + 6n - 1)$

24. What is the product of $2x + 3$ and $4x^2 - 5x + 6$?

- F. $8x^3 - 2x^2 + 3x + 18$
 G. $8x^3 - 2x^2 - 3x + 18$
 H. $8x^3 + 2x^2 - 3x + 18$
 J. $8x^3 + 2x^2 + 3x + 18$

25. The roots of the equation $2x^2 - 8x = 0$ are

- A. -2 and 2 B. 0 and -4
 C. 0 , -2 , and 2 D. 0 and 4

26. What are the roots of the equation $x^2 - 10x + 21 = 0$?

- F. 1 and 21 G. -5 and -5
 H. 3 and 7 J. -3 and -7

27. The solution set of $x^2 - 2x - 8 = 0$ is

- A. $\{4, -2\}$ B. $\{-4, 2\}$
 C. $\{-2, 8\}$ D. $\{6, 2\}$

28. What is the solution set of the equation $x^2 - 2x - 3 = 0$?

- F. $\{2, 1\}$ G. $\{2, -1\}$
 H. $\{-3, 0\}$ J. $\{3, -1\}$

29. What is the solutions set of the equation $2x^2 + x - 3 = 0$?

- A. $\{\frac{1}{2}, -3\}$ B. $\{-\frac{3}{2}, 1\}$
 C. $\{-\frac{1}{2}, -3\}$ D. $\{\frac{3}{2}, 1\}$

30. What is the solution set of the equation $x^2 + 11x + 28 = 0$?

- F. $\{-7, 4\}$ G. $\{-7, -4\}$
 H. $\{3, 4\}$ J. $\{-3, -4\}$

31. What is the solution set of the equation $3x^2 = 48$?

- A. $\{-2, -8\}$ B. $\{2, 8\}$
 C. $\{4, -4\}$ D. $\{4, 4\}$

32. If $f(x) = 3 - x^2$, find $f(-2)$.

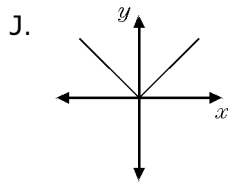
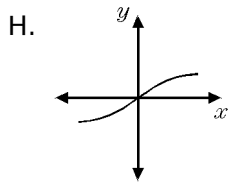
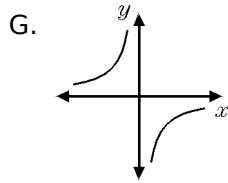
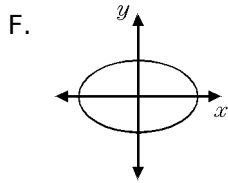
33. If $f(x) = |x^3 - 3|$, then $f(-1)$ is equivalent to

- A. 0 B. 2 C. -2 D. 4

34. If $f(x) = \sqrt{25 - x^2}$, find the value of $f(3)$.

35. If $f(x) = x^2 + 3x - 5$, find the value of $f(3)$.

36. Which diagram is not the graph of a function?

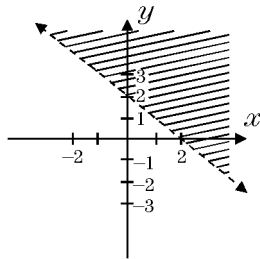


37. Which ordered pair is in the solution set of $y \geq 2x + 3$?

- A. (1, 4) B. (3, 2) C. (0, 5) D. (0, 0)

38. The graph of which inequality is shown in the accompanying diagram?

- F. $x - y > 2$
 G. $x + y > 2$
 H. $x - y < 2$
 J. $x + y < 2$



39. Solve the following system of equations algebraically and check:

$$\begin{aligned} x - 4y &= 16 \\ y &= 1 - x \end{aligned}$$

40. Solve the following system of equations algebraically and check:

$$\begin{aligned} 3x + 2y &= 6 \\ 5x - 3y &= -28 \end{aligned}$$

41. Solve the following system of equations for x :

$$\begin{aligned} 3x + 3y &= 21 \\ 6x - 3y &= 6 \end{aligned}$$

42. Which ordered pair is the solution to this system of equations?

$$\begin{aligned} y &= x + 4 \\ x + y &= 2 \end{aligned}$$

- F. (1, 5) G. (0, 2)
 H. (-1, 3) J. (-4, 0)

43. Solve for p in terms of r , s , and t : $rp + s = t$

44. Solve for x in terms of b : $3x - b = 2b$

45. If $dx - 2 = h$, then x is equal to

- A. $h + \frac{2}{d}$ B. $\frac{h-2}{d}$ C. $\frac{h+2}{d}$ D. $\frac{h}{d} + 2$

46. Given the formula $P = K^2W$, find the value of P if $K = 5$ and $W = -3$.

47. If $a = \frac{b^2 - c}{2}$, find the value of a when $b = 2$ and $c = -4$.

48. If $\frac{a}{x} + 1 = \frac{c}{x}$, which is an expression for x in terms of c and a ?

- F. $x = c + a$ G. $x = c - a$
 H. $x = a - c$ J. $x = a + c + 1$

49. What is the value of the expression $3a^2 - 4|a| + 6$ when $a = -3$?

- A. -24 B. -9 C. 21 D. 45

50. Faith wants to use the formula $C(f) = \frac{5}{9}(f - 32)$ to convert degrees Fahrenheit, f , to degrees Celsius, $C(f)$. If Faith calculated $C(68)$, what would her result be?

- F. 20° Celsius G. 20° Fahrenheit
 H. 154° Celsius J. 154° Fahrenheit

51. The expression $\sqrt{200}$ is equivalent to

- A. $25\sqrt{8}$ B. $100\sqrt{2}$
 C. $2\sqrt{10}$ D. $10\sqrt{2}$

52. The expression $\sqrt{75}$ is equal to

- F. $2\sqrt{5}$ G. $3\sqrt{5}$ H. $5\sqrt{2}$ J. $5\sqrt{3}$

53. The expression $\sqrt{93}$ is a number between

- A. 3 and 9 B. 8 and 9
 C. 9 and 10 D. 46 and 47

54. When $\sqrt{72}$ is expressed in simplest $a\sqrt{b}$ form, what is the value of a ?

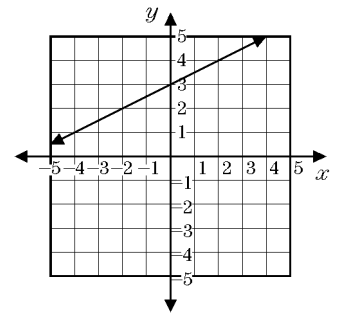
- F. 6 G. 2 H. 3 J. 8

55. What is $2\sqrt{45}$ expressed in simplest radical form?

- A. $3\sqrt{5}$ B. $5\sqrt{5}$ C. $6\sqrt{5}$ D. $18\sqrt{5}$

56. Which equation represents line ℓ , shown in the accompanying diagram?

- F. $y = 2x + 3$
 G. $y = \frac{1}{2}x + 3$
 H. $y = 3x + \frac{1}{2}$
 J. $y = 3x + 2$



57. The graph of which equation passes through points $(0, 6)$ and $(4, -1)$?

- A. $y = \frac{7}{4}x + 6$ B. $y = \frac{4}{7}x + 6$
 C. $y = -\frac{7}{4}x + 6$ D. $y = -\frac{4}{7}x + 6$

58. The line $3x - 2y = 12$ has

- F. a slope of $\frac{3}{2}$ and a y-intercept of -6
 G. a slope of $-\frac{3}{2}$ and a y-intercept of 6
 H. a slope of 3 and a y-intercept of -2
 J. a slope of -3 and a y-intercept of -6

59. A line having a slope of $\frac{3}{4}$ passes through the point $(-8, 4)$. Write the equation of this line in slope-intercept form.

60. Graph the following system of inequalities on the set of axes shown below and label the solution set S .

$$y > -x + 2$$

$$y \leq 2x + 5$$

