

Desmos Additional Practice

- In the xy -plane, line t passes through the points $(0,7)$ and $(1,16)$. Which equation defines line t ?
 - $y = \frac{1}{9}x + 7$
 - $y = x + \frac{1}{9}$
 - $y = 9x + 8$
 - $y = 9x + 7$

- In the xy -plane, line t passes through the points $(2,13)$ and $(1,10)$. Which equation defines line t ?
 - $y = 3x - 7$
 - $y = x + \frac{1}{3}$
 - $y = 3x + 5$
 - $y = 3x + 7$

- In the xy -plane, line p has a slope of $-\frac{5}{2}$ and an x -intercept of $(-8,0)$. What is the y -coordinate of the y -intercept of line p ?

- In the xy -plane, line p has a slope of $\frac{7}{3}$ and an x -intercept of $(-6,0)$. What is the y -coordinate of the y -intercept of line p ?

- In the xy -plane, line p has a slope of $\frac{9}{2}$ and an x -intercept of $(4,0)$. What is the y -coordinate of the y -intercept of line p ?

6. The function f is defined by $f(x) = a * \sqrt{x + b}$, where a and b are constants. In the xy -plane, the graph of $y = f(x)$ passes through the point $(-4, 0)$, and $f(4) < 0$. Which of the following must be true?
- A) $f(0) = 4$
 - B) $f(0) = -4$
 - C) $a > b$
 - D) $a < b$

$$y - x = -2$$

$$5x = 3y$$

7. What is the solution (x, y) to the given system of equations?
- A) $(\frac{5}{2}, 1)$
 - B) $(1, \frac{3}{5})$
 - C) $(-3, -5)$
 - D) $(-5, -3)$

$$2y - 3x = -5$$

$$7x = 3y$$

8. What is the solution (x, y) to the given system of equations?
- A) $(\frac{7}{2}, 1)$
 - B) $(1, \frac{3}{7})$
 - C) $(-7, -3)$
 - D) $(-3, -7)$

$$y - 3x = 17$$

$$4x = 7y$$

9. What is the solution (x, y) to the given system of equations?
- A) $(\frac{5}{2}, 1)$
 - B) $(-\frac{4}{7}, \frac{7}{4})$
 - C) $(-4, -7)$
 - D) $(-7, -4)$

10. The function g is defined by $g(x) = (x + 14)(t - x)$, where t is a constant. In the xy -plane, the graph of $y = g(x)$ passes through the point $(22,0)$. What is the value of $g(0)$?
11. The function g is defined by $g(x) = (x + 2)(t - x)$, where t is a constant. In the xy -plane, the graph of $y = g(x)$ passes through the point $(24,0)$. What is the maximum value of $g(x)$?
12. The function g is defined by $g(x) = (x + 14)(t - x)$, where t is a constant. In the xy -plane, the graph of $y = g(x)$ passes through the point $(20,0)$. For what value of x does $g(x)$ achieve its maximum value ?
13. The function g is defined by $g(x) = (x + 12)(t - x)$, where t is a constant. In the xy -plane, the graph of $y = g(x)$ passes through the point $(28,0)$. What is the maximum value of $g(x)$?
14. What is the y -coordinate of the y -intercept of the graph of $\frac{2x}{7} = -\frac{5y}{9} + 22$ in the xy -plane?
15. What is the y -coordinate of the y -intercept of the graph of $\frac{x}{7} = -\frac{4y}{9} - 12$ in the xy -plane?

16. What is the y -coordinate of the y -intercept of the graph of $\frac{2x}{3} = -\frac{5y}{12} - 4$ in the xy -plane?

$$w^2 + 10w - 38 = 0$$

17. Which of the following is a solution to the given equation?

- A) $5 - 3\sqrt{7}$
- B) $6\sqrt{7}$
- C) $-5 + 3\sqrt{7}$
- D) $-5 + 6\sqrt{7}$

$$w^2 + 8w - 34 = 0$$

18. Which of the following is a solution to the given equation?

- A) $4 - 5\sqrt{2}$
- B) $10\sqrt{2}$
- C) $-4 + 5\sqrt{2}$
- D) $-4 + 10\sqrt{2}$

$$w^2 + 6w - 32 = 0$$

19. Which of the following is a solution to the given equation?

- A) $-3 - 2\sqrt{41}$
- B) $3\sqrt{7}$
- C) $-3 + 2\sqrt{41}$
- D) $-3 + \sqrt{41}$

$$y = 14$$

$$y = -2(x - 17)^2 + 15$$

20. If the given equations are graphed in the xy -plane, at how many points do the graphs of the equations intersect?
- A) Exactly one
 - B) Exactly two
 - C) Infinitely many
 - D) Zero

$$y = 12$$

$$y = -5(x - 11)^2 + 12$$

21. If the given equations are graphed in the xy -plane, at how many points do the graphs of the equations intersect?
- A) Exactly one
 - B) Exactly two
 - C) Infinitely many
 - D) Zero

$$y = 13$$

$$y = -2(x - 17)^2 + 9$$

22. If the given equations are graphed in the xy -plane, at how many points do the graphs of the equations intersect?
- A) Exactly one
 - B) Exactly two
 - C) Infinitely many
 - D) Zero

$$y = x + 8$$

$$y = x^2 + 15x + 56$$

23. A solution to the given system of equations is (x, y) . What is the greatest possible value of x ?
- A) -8
 - B) -6
 - C) 9
 - D) 63

$$y = x + 7$$

$$y = x^2 + 16x + 63$$

24. A solution to the given system of equations is (x, y) . What is the greatest possible value of x ?
- A) -8
 - B) -7
 - C) 7
 - D) 63

$$y = x + 5$$

$$y = x^2 + 14x + 45$$

25. A solution to the given system of equations is (x, y) . What is the *least* possible value of x ?
- A) -8
 - B) -5
 - C) 8
 - D) 45

$$y = x + 4$$

$$y = x^2 + 12x + 32$$

26. A solution to the given system of equations is (x, y) . What is the *least* possible value of x ?
- A) -7
 - B) -6
 - C) 9
 - D) 32

27. Which quadratic equation has no real solutions?

- A) $x^2 + 14x - 49 = 0$
- B) $x^2 - 14x + 49 = 0$
- C) $5x^2 - 14x - 49 = 0$
- D) $5x^2 - 14x + 49 = 0$

28. Which quadratic equation has no real solutions?

- A) $x^2 + 13x - 36 = 0$
- B) $x^2 - 13x + 36 = 0$
- C) $4x^2 - 13x - 36 = 0$
- D) $4x^2 - 13x + 36 = 0$

Answers

1. D
2. D
3. -20
4. 14
5. -18
6. D
7. C
8. D
9. D
10. 308
11. 169
12. 3
13. 400
14. 39.6
15. -27
16. -9.6
17. C
18. C
19. D
20. B
21. A
22. D
23. B
24. B
25. A
26. A
27. D
28. D