

# Honors Algebra 3 Summer Assignment

## Part 2 – Show Your Work – Must be turned in and will be graded

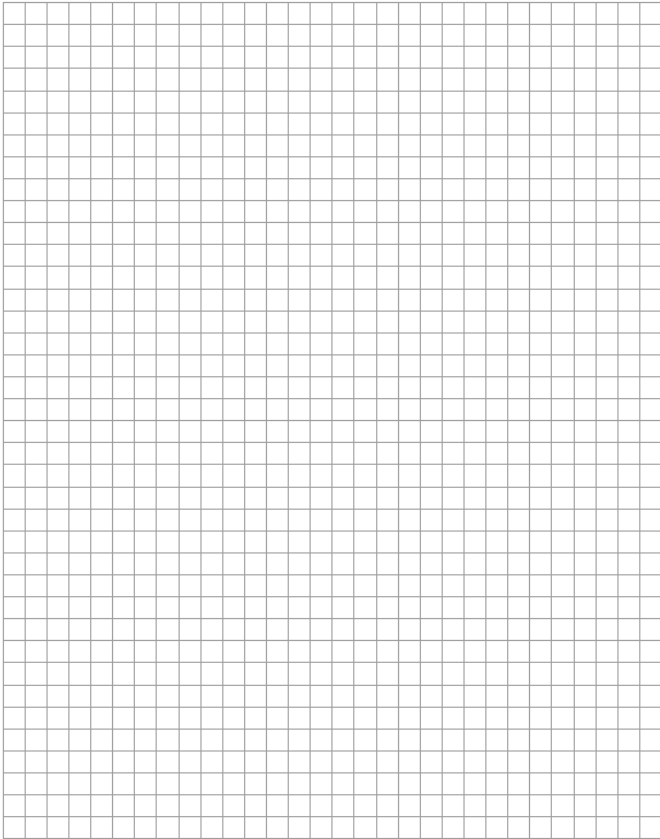
Solve each problem and show your work. This section will be graded for accuracy and work. Email Mr. Torres ([rtorres@johncarroll.org](mailto:rtorres@johncarroll.org)) or Mrs. Kirkpatrick ([kkirkpatrick@johncarroll.org](mailto:kkirkpatrick@johncarroll.org)) if you have questions.

1. Solve the equation  $12 - 9(8 - 7x) = 6(8 - x) - 12x$ .
2. Find the distance (to the nearest hundredth) between the points  $P_1(-8, 5)$  and  $P_2(4, -1)$ .  
Then find the coordinates of the midpoint of the line segment connecting the points.
3. Find the distance (to the nearest hundredth) between the points  $P_1(8, 1)$  and  $P_2(-4, 2)$ .  
Then find the coordinates of the midpoint of the line segment connecting the points.
4. Find the  $x$ - and  $y$ -intercepts of the line  $3x + 5y = 45$ .
5. Find the zero of the linear function  $f(x) = -8x - 9$ .

6. Find the slope of the line containing the given points  $P_1(3, -1)$ ,  $P_2(8, 2)$ .

7. Find the slope of the line containing the given points  $P_1(2, -3)$ ,  $P_2(1, 0)$ .

8. Graph the line that passes through the point  $(-1, 7)$ , and has the slope  $-4$ .



9. Find the equation of the line containing the point  $(5, -11)$ , and has slope  $-3$ .

10. Find the equation of the line that contains the points  $(0, -1)$  and  $(-7, 9)$ .
11. Find the equation of the line that contains the points  $P_1(1, 2)$ ,  $P_2(6, -8)$ .
12. Find the equation of the line that contains the points  $P_1(-1, 1)$ ,  $P_2(2, -11)$ .
13. Find the equation of the line that contains the points  $P_1(-2, -5)$  and  $P_2(7, -9)$ .
14. Find the equation of the line that contains the points  $P_1(0, 0)$ ,  $P_2(-5, 2)$ .
15. Is the line that contains the points  $(-2, 6)$  and  $(4, -9)$  parallel to the line that contains the points  $(-5, 10)$  and  $(-5, -1)$ ?

16. Is the line that contains the points  $(-4, 12)$  and  $(6, -15)$  perpendicular to the line that contains the points  $(15, 4)$  and  $(-12, -6)$ ?
17. Is the line that contains the points  $(1, -6)$  and  $(-9, -10)$  perpendicular to the line that contains the points  $(10, -1)$  and  $(6, 9)$ ?
18. Find the equation of the line containing the point  $(3, -27)$  and parallel to the line  $11x + y = -3$ .
19. Find the equation of the line that contains the point  $(6, 8)$  and is perpendicular to the line  $y = -9x - 1$ .
20. Find the equation of the line containing the point  $(7, 32)$  and perpendicular to the line  $9x + 27y = -5$ .

21. Solve by substitution:

$$2x - 2y = 2$$

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

22. Solve by the addition method:

$$5x - 3y = -27$$

$$4x + 2y = -4$$

23. Solve by the addition method.

$$x - y = 11$$

$$x + y = 3$$