

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@johnncarroll.org), Mrs. Kirkpatrick (kkirkpatrick@johnncarroll.org), or Mr. Cotter (mcotter@johnncarroll.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.

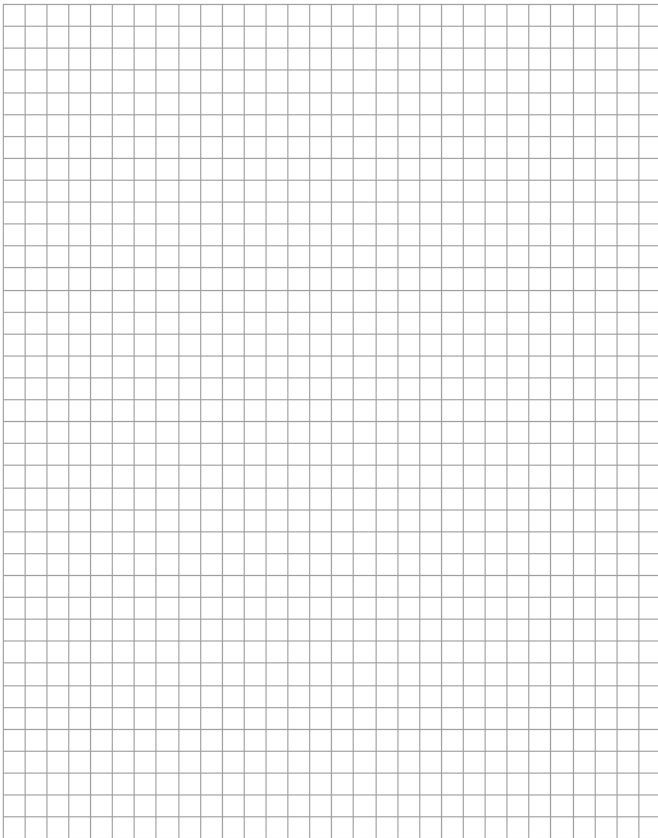
4. Find the x - and y -intercepts of the line $3x + 5y = 45$.

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.

$$x - y = 11$$

$$x + y = 3$$