Honors Algebra 3 Summer Assignment
Part 1 – Multiple Choice – Optional Practice with Answers Attached

Select the correct answer to each problem. You may check your work with the answers at the end of this section. This section will only be graded for completion. Email Mr. Torres (rtorres@johncarroll.org) or Mrs. Kirkpatrick (kkirkpatrick@johncarroll.org) if you have questions.

1. Solve the equation $10[9+11(9-x)+8x]=12-8x$.

   A) $\frac{178}{5}$ B) $\frac{534}{13}$ C) $\frac{178}{3}$ D) $\frac{534}{11}$ E) $\frac{534}{7}$

2. Solve the equation $\frac{x-1}{3}-\frac{x+4}{5}=\frac{4x-1}{8}$.

   A) $-\frac{11}{4}$ B) $\frac{11}{4}$ C) -121 D) 121 E) $\frac{4}{11}$

3. Find the length of the line segment between the given points.
   $P_1(7,7)$ and $P_2(8,9)$

   A) $\sqrt{3}$ B) $\sqrt{5}$ C) 25 D) 481 E) $\sqrt{481}$

4. Find the midpoint of the line segment between the given points.
   $P_1(5,7)$ and $P_2(6,9)$

   A) $\left(-\frac{1}{2},-1\right)$ B) $\left(6,\frac{16}{2}\right)$ C) $\left(-\frac{1}{2},-1\right)$ D) $\left(\frac{11}{2},8\right)$ E) $\left(\frac{11}{2},8\right)$

5. Find the x- and y-intercepts and graph.
$x - 6y = 7$

A) x-intercept: $(7,0)$
y-intercept: $(0,-6)$

B) x-intercept: $\left(-\frac{6}{7},0\right)$
y-intercept: $(0,7)$

C) x-intercept: $(0,6)$
y-intercept: $(-7,0)$

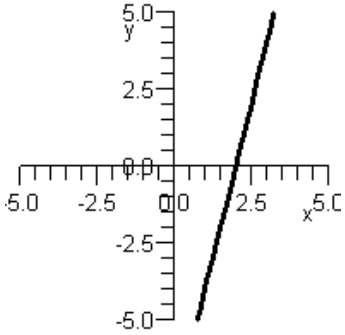
D) x-intercept: $\left(0,\frac{1}{7}\right)$
y-intercept: $(0,13)$

E) x-intercept: $(7,0)$
y-intercept: $\left(0,-\frac{7}{6}\right)$

6. The x-intercept of the graph of $f(x) = -\frac{3}{5}x - 3$ is (–5, 0). What is the zero of f?

A) 0 B) 5 C) –5 D) 3 E) $\frac{3}{5}$

7. From the graph, determine the zero of the function.



A) $x = 3$ B) $x = 1$ C) $x = 2$ D) $x = -2$ E) $x = -1$

8. Find the slope of the line containing the points (2, –9) and (9, –4).

A) $-\frac{7}{5}$ B) $\frac{7}{5}$ C) $\frac{5}{7}$ D) $\frac{13}{11}$ E) $\frac{11}{13}$

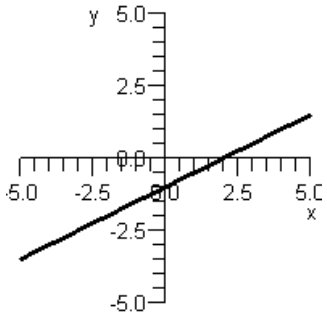
9. Find the slope of the line containing the given points.

$P_1(1,1),\ P_2(4,-8)$

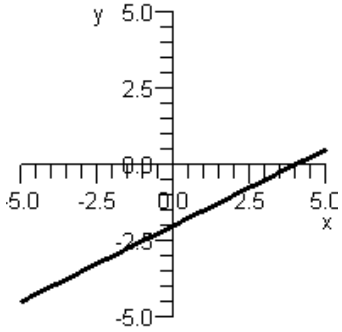
A) 3 B) –3 C) $-\frac{1}{3}$ D) –9 E) Undefined

10. Graph $y=\frac{1}{2}x+1$ by using the slope and y-intercept.

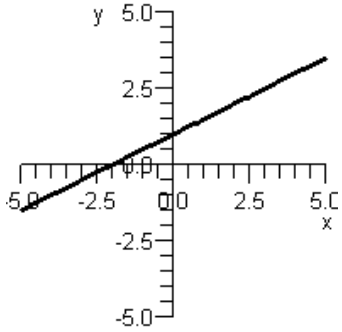
A)



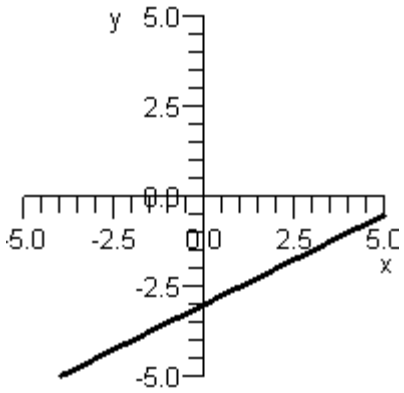
B)



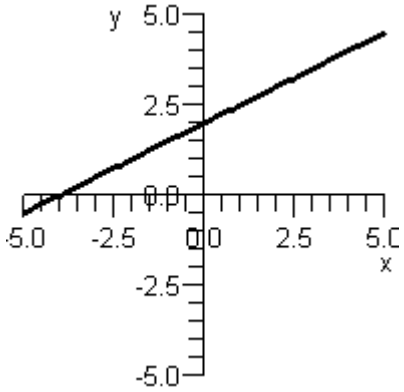
C)



D)

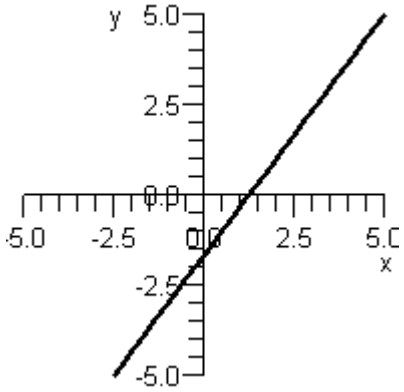


E)

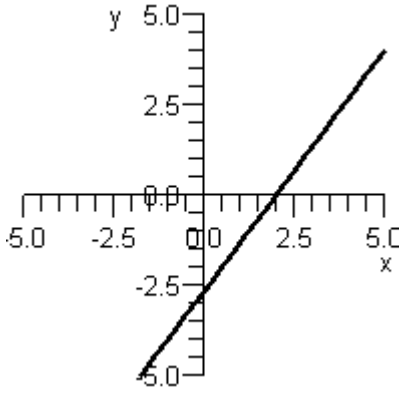


11. Graph the line that passes through the point $(-1,-3)$ and has slope $\frac{4}{3}$.

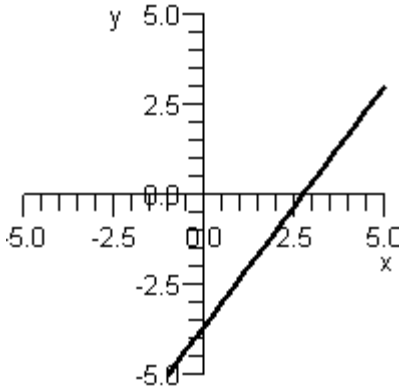
A)



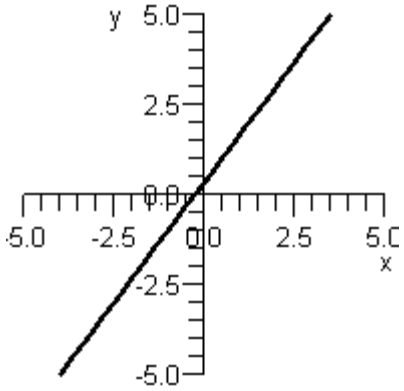
B)



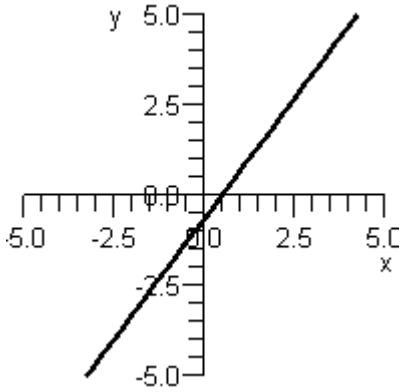
C)



D)



E)



12. Find the equation of the line that contains the point (0, 9) and has the slope –4.

A) $y = -9x - 4$
B) $y = -4x - 9$
C) $y = 4x - 9$
D) $y = -4x + 9$
E) $y = 9x - 4$

13. Find the equation of the line that contains the point (–10, –9), and the slope is undefined.

A) $x = -9$ B) $y + 9 = x + 10$ C) $y = -10$ D) $x = -10$ E) $y = -9$

14. Find the equation of the line containing the points $P_1(0, 5)$, $P_2(-5, 7)$

A) $y = -\frac{2}{5}x + 5$

B) $y = -\frac{2}{5}x$

C) $y = 2x + 5$

D) $y = \frac{5}{2}x + 5$

E) $y = \frac{2}{5}x + 5$

15. Find the equation of the line that contains the points $P_1(-4, -7)$ and $P_2(11, -7)$.

A) $x = -7$ B) $y = \frac{1}{15}(x + 4) - 7$ C) $y = 0$ D) $x = 0$ E) $y = -7$

16. Find the equation of the line that contains the points $P_1(-12, -3)$ and $P_2(-12, 3)$.

A) $x = -12$ B) $y = 6(x + 12) - 3$ C) $y = 0$ D) $x = 0$ E) $y = -12$

17. Are the lines $8x + 5y = 11$ and $8x + 5y = -3$ parallel?

A) No B) Yes C) Insufficient information

18. Are the lines $x - 10y = 8$ and $10x + y = 10$ perpendicular?

A) Yes B) No C) Insufficient information

19. Is the line that contains the points (3, 5) and (9, 7) parallel to the line that contains the points (–9, 3) and (–9, –9)?
A) Yes B) No C) Insufficient information

20. Find the equation of the line that contains the point (–1, –5) and is parallel to the line $7x-4y=1$.

A) $y=\frac{1}{7}x+\frac{13}{4}$

B) $y=-\frac{7}{4}x-\frac{13}{4}$

C) $y=\frac{7}{4}x-\frac{13}{4}$

D) $y=-\frac{4}{7}x+\frac{13}{4}$

E) $y=\frac{4}{7}x-\frac{13}{4}$

21. Find the equation of the line containing the point (10, 1) and perpendicular to the line $y=-9x+12$.

A) $y=\frac{1}{9}x-\frac{1}{9}$

B) $y=-\frac{1}{9}x+\frac{19}{9}$

C) $y=9x-89$

D) $y=-9x+91$

E) $y=-\frac{1}{9}x+12$

22. Solve by substitution:

$$y = 4x + 10$$
$$x + 2y = -16$$

A) (–4, –6) B) (–3, –2) C) (–5, –10) D) Dependent E) No solution

23. Solve by the addition method:

$$3x - 5y = 4$$
$$4x + 4y = -16$$

A) (–12,–8)
B) Dependent. The solutions satisfy $4x + 4y = -16$.
C) (–2, –2)
D) (–7,–5)
E) No solution

Answers to Part 1 – Multiple Choice

1. D
2. A
3. B
4. D
5. E
6. C
7. C
8. C
9. B
10. C
11. A
12. D
13. D
14. A
15. E
16. A
17. B
18. A
19. B
20. C
21. A
22. A
23. C