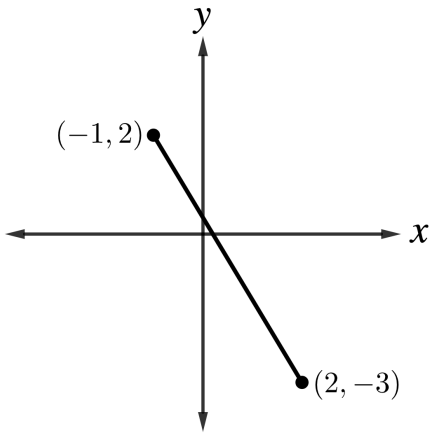
Date Completed: _____
Mentor Initials: _____

A mentor can change everything.

ACT Distance and Midpoint Quiz

1. Calculate the distance of the line segment in the graph below.



A. $\sqrt{10}$
B. $\sqrt{12}$
C. $\sqrt{19}$
D. $\sqrt{34}$
E. $2\sqrt{17}$

2. What is the length of the line segment with endpoints $(12, -4)$ and $(-7,5)$?
A. 26
B. 106
C. $\sqrt{26}$
D. $\sqrt{106}$
E. $\sqrt{442}$

3. The coordinates of the endpoints of $\overline{GH}$, in the standard (x, y) coordinate plane, are $(-7, -2)$ and $(3,4)$. What is the x-coordinate of the midpoint of $\overline{GH}$?
A. -4
B. -2
C. 0
D. 2
E. 5

4. If the midpoint of the line segment $\overline{AB}$ is $(3,5)$ and point B has coordinates $(6,2)$, what are the coordinates of A ?

A. $(0,8)$
B. $(9,-1)$
C. $(4.5,3.5)$
D. $(9,7)$
E. $(2,-4)$

5. In the standard (x,y) coordinate plane, what is the distance, in coordinate units, from $A\left(4\frac{1}{3},-4\right)$ to $B\left(-2\frac{5}{9},-4\right)$?

A. $\frac{8}{9}$
B. $2\frac{2}{9}$
C. $3\frac{5}{9}$
D. $6\frac{8}{9}$
E. $9\frac{4}{9}$

6. Two boats leave the marina and head for docks at different points of the lake. The first boat moors at a dock that is 2 miles north and 3 miles east of the marina. The second boat moors at a dock that is 4 miles south and 2 miles east of the marina. How many miles apart are the boats when they are docked?

A. 6
B. $\sqrt{37}$
C. $\sqrt{53}$
D. 8
E. $\sqrt{71}$

7. What is the distance, in coordinate units, between $1-2i$ and $5+3i$ in the complex plane?

A. 6
B. 11
C. $\sqrt{27}$
D. $\sqrt{41}$
E. $\sqrt{63}$

8. A circle in the standard (x, y) coordinate plane has center $C\,(-3, 4)$ and passes through $A\,(4, 7)$. Line segment $\overline{AB}$ is a diameter of this circle. What are the coordinates of point B ?

A. $(-5, -1)$
B. $(-10, 1)$
C. $(0, 1)$
D. $(3, 5)$
E. $(6, -2)$

9. In the standard (x, y) coordinate plane, the 3 distinct points $A(2, 7)$, $B(5, -4)$, and C are collinear, and B is equidistant to A and C. What are the coordinates of C?

A. $(2, 11)$
B. $(3, 0)$
C. $(5, -10)$
D. $(6, -13)$
E. $(8, -15)$

10. The equation $(x - 3)^2 + (y - 5)^2 = 9$ is that of a circle that lies in the standard (x, y) coordinate plane. One endpoint of a diameter of the circle has a y-coordinate of 7. What is the y-coordinate of the other endpoint of that diameter?

A. -7
B. 0
C. 3
D. 8
E. 11