

3.3

Midpoint of a Line Segment in the Plane

• Example 1

(a) Find the midpoint of (2, 0) and (10, 0).

$$M = \left(\frac{2 + 10}{2}, \frac{0 + 0}{2} \right) = (6, 0)$$

(b) Find the midpoint of (5, 7) and (-1, -3).

$$M = \left(\frac{5 + (-1)}{2}, \frac{7 + (-3)}{2} \right) = (2, 2)$$

(c) Find the midpoint of (3, -5) and (-2, -2).

$$M = \left(\frac{3 + (-2)}{2}, \frac{(-5) + (-2)}{2} \right) = \left(\frac{1}{2}, -\frac{7}{2} \right)$$

• • • CHECK YOURSELF 1

Find the midpoint for each pair of points.

a. (0, 6) and (0, -4).

b. (3, -6) and (-5, 4).

c. (-1, -5) and (-2, 8).

• • • CHECK YOURSELF ANSWER

1. (a) (0, 1); (b) (-1, -1); (c) $\left(-\frac{3}{2}, \frac{3}{2}\right)$.

3.3 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Find the midpoint for each pair of points.

- | | |
|-------------------------|--------------------------|
| 1. (0, 9) and (0, -5) | 2. (0, 6) and (6, 0) |
| 3. (1, -2) and (5, -8) | 4. (-2, 8) and (-4, -2) |
| 5. (2, -8) and (-1, -5) | 6. (-3, 5) and (2, -6) |
| 7. (1, 4) and (7, 5) | 8. (-2, 9) and (5, 11) |
| 9. (3, 8) and (-9, 12) | 10. (-4, -4) and (8, -2) |