

### Distance and Midpoint

Find the **DISTANCE** between each set of points.

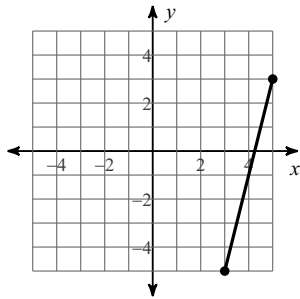
1)  $(0, 5), (2, -5)$

2)  $(6, -3), (4, 2)$

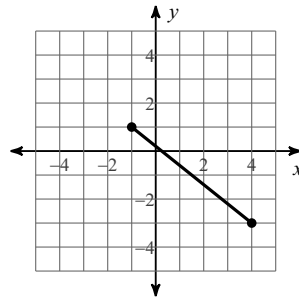
3)  $(5, 3), (-7, -3)$

4)  $(3, -1), (0, 3)$

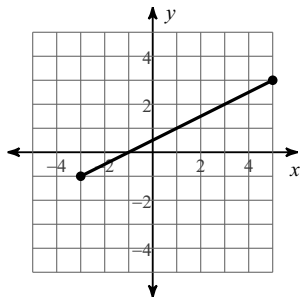
5)



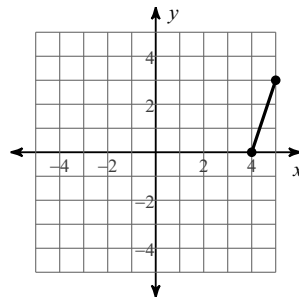
6)



7)



8)



**Find the MIDPOINT of the line segment with the given endpoints.**

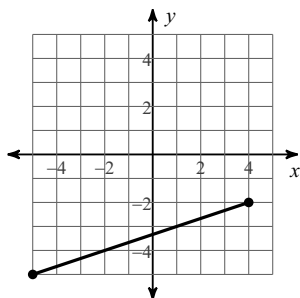
9)  $(3, 9), (-8, 7)$

10)  $(10, -8), (-5, -5)$

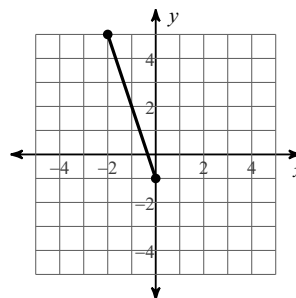
11)  $(7, 7), (-3, 1)$

12)  $(-5, -10), (5, 8)$

13)



14)



**Find the other endpoint of the line segment with the given endpoint and midpoint.**

15) Endpoint:  $(4, 2)$ , midpoint:  $(6, -8)$

16) Endpoint:  $(-4, -1)$ , midpoint:  $(-4, 6)$

17) Endpoint:  $(-10, 1)$ , midpoint:  $(1, -1)$

18) Endpoint:  $(1, -3)$ , midpoint:  $(-9, -6)$

19) Endpoint:  $(0, 0)$ , midpoint:  $(10, 1)$

20) Endpoint:  $(1, -7)$ , midpoint:  $(4, -10)$

- 21) The endpoints of a line segment are  $(-5, 5)$  and  $(4, -10)$ . Find the coordinates of the point on the segment that is  $\frac{1}{3}$  the distance from  $(-5, 5)$ .
- 22) The endpoints of a line segment are  $(-6, -2)$  and  $(2, -10)$ . Find the coordinates of the point on the segment that is  $\frac{1}{4}$  the distance from  $(-6, -2)$ .
- 23) The endpoints of a line segment are  $(-3, 0)$  and  $(12, -10)$ . Find the coordinates of the point on the segment that is  $\frac{1}{5}$  the distance from  $(-3, 0)$ .

**Simplify the radical expression.**

24)  $\sqrt{405}$

25)  $\sqrt{75}$

26)  $\sqrt[3]{125}$

27)  $7\sqrt{225}$

28)  $5\sqrt[4]{400x^3y^5}$

29)  $6\sqrt[3]{1029x^3}$