

# Day 4: Distance and Midpoint

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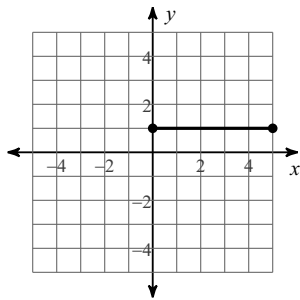
Date \_\_\_\_\_

## Distance

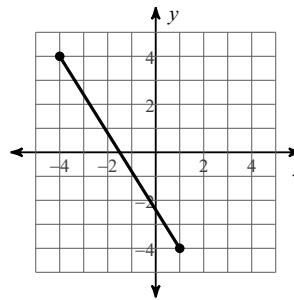
1) Distance Formula is:

Find the distance between each pair of points.

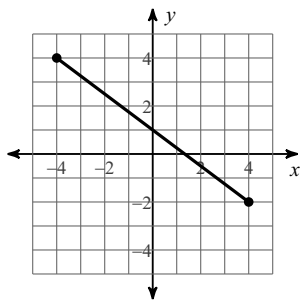
2)



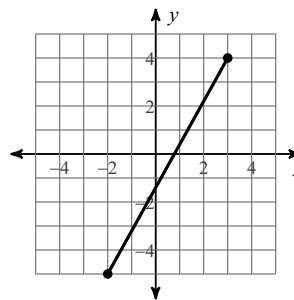
3)



4)



5)



6)  $(6, 3)$ ,  $(2, 0)$

7)  $(4, -3)$ ,  $(-8, -6)$

8)  $(-6, -7)$ ,  $(2, -4)$

9)  $(0, 1)$ ,  $(4, -5)$

## Midpoint

10) How do you find the midpoint between two points?

11) Midpoint Formula is:

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

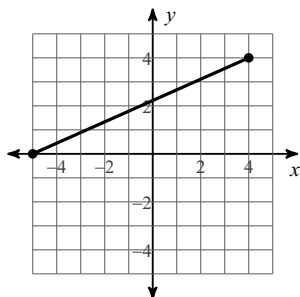
12)  $(5, 1)$ ,  $(-2, 6)$

13)  $(8, -7)$ ,  $(2, 5)$

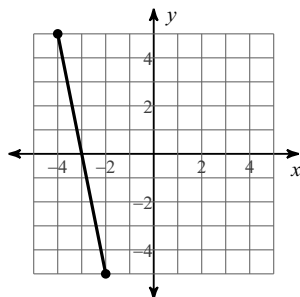
14)  $(-1, -4)$ ,  $(-1, -1)$

15)  $(2, -8)$ ,  $(-8, -4)$

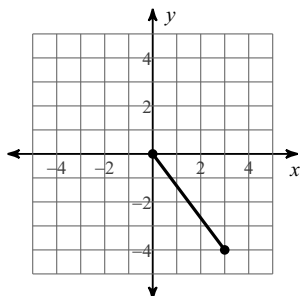
16)



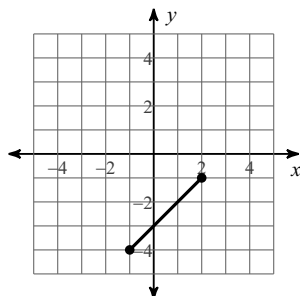
17)



18)



19)



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

20) Endpoint:  $(-2, 9)$ , midpoint:  $(5, 8)$

21) Endpoint:  $(-5, 4)$ , midpoint:  $(-7, 10)$

22) Endpoint:  $(4, 8)$ , midpoint:  $(2, 10)$

23) Endpoint:  $(1, -10)$ , midpoint:  $(-4, -5)$

24) Endpoint:  $(1, 2)$ , midpoint:  $(0, -10)$

25) Endpoint:  $(9, 6)$ , midpoint:  $(-8, 1)$

**Sometimes we need to find a distance different than the midpoint on a line segment. So, how could we find a distance that is  $\frac{1}{4}$  or  $\frac{1}{3}$  or  $\frac{2}{5}$  the distance from one endpoint?**

26) The endpoints of a line segment are  $(-4, 5)$  and  $(4, -11)$ .

Find the coordinates of the point on the segment that is  $\frac{1}{4}$  the distance from  $(-4, 5)$ .

27) The endpoints of a line segment are  $(-2, 1)$  and  $(7, 4)$ .  
Find the point that is  $\frac{1}{3}$  the distance from  $(-2, 1)$ .

28) The endpoints of a line segment are  $(-8, -3)$  and  $(2, 12)$ .  
Find the point that is  $\frac{1}{5}$  the distance from  $(2, 12)$ .

29) The endpoints of a line segment are  $(-12, 0)$  and  $(-4, 12)$ .  
Find the point that is  $\frac{1}{4}$  the distance from  $(-12, 0)$ .