Lesson 1.5 Locating Points Using Weighted Averages

Monday, September 04, 2023 12:29 PM

Click Link Below to Open the Interactive Pear Deck PowerPoint

https://app.peardeck.com/student/tdknbzuxr

Lesson 1.5 Locating

Lesson 1.5 Locating Points Using Weighted Averages

Workbook pages 42-48

Content Objective

Students will locate points on a number line and a coordinate plane by using weighted averages.

MA.912.GR.3.1

Determine the weighted average of two or more points on a line.

MA.912.GR.3.3

Use coordinate geometry to solve mathematical and real-world geometric problems involving lines, circles, triangles and quadrilaterals.

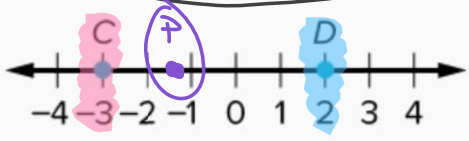
Mc Graw Hill

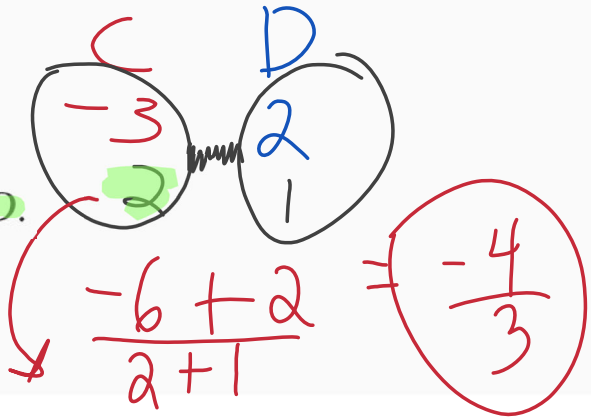
Example 1: Find a Weighted Average on a Number Line

Find the coordinate of P that represents the weighted average for each set of points with the given conditions.

a. Enter your answers.

Point C weighs twice as much as point D.

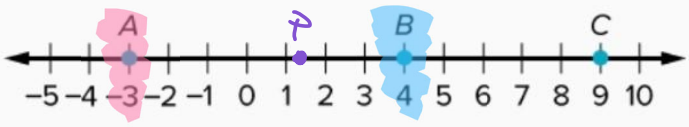




Hill

Example 1 Check

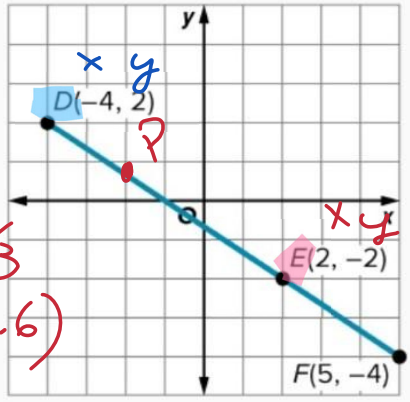
Find the coordinate of P that represents the weighted average for the point, based on the given conditions.



Point A has a weight of 2, and point B has a weight of 3.

Example 2: Find a Weighted Average on the Coordinate Plane

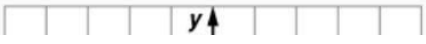
Find the coordinate of P that represents the weighted average for the point, based on the given conditions.

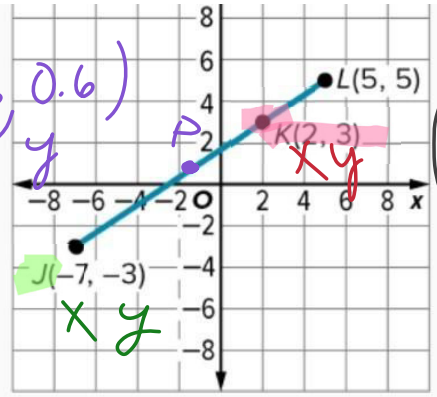


Point D weighs twice as much as point E.

Example 2 Check

Find the coordinate of P that represents the weighted average for the point, based on the given conditions.





(−1.6, 0.6)
x, y

J K
−7 2
2 3

$\frac{-7(2)+2(3)}{2+3} = \frac{-8}{5} = -1.6$ x

J K
−3 3
2 3

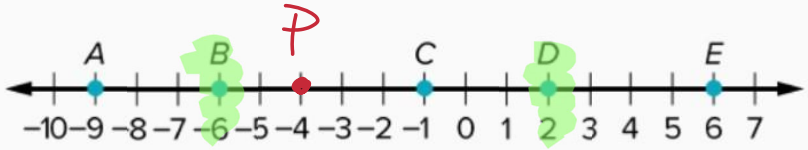
$\frac{-3(2)+3(3)}{2+3} = \frac{-6+9}{2+3}$

y = 0

Point J has a weight of 2, and point K has a weight of 3.

Practice

1. Use the number line to find the coordinate of P that represents the weighted average of each set of points with the given conditions. (Example 1)

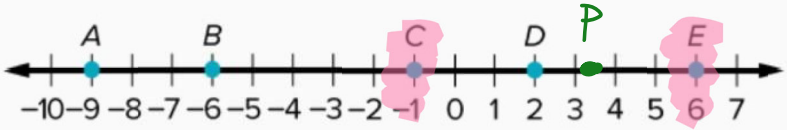


Point B weighs three times as much as point D.

B D
−6 2
3 1

$\frac{-18+2}{3+1} = \frac{-16}{4}$

2. Use the number line to find the coordinate of P that represents the weighted average of each set of points with the given conditions. (Example 1)

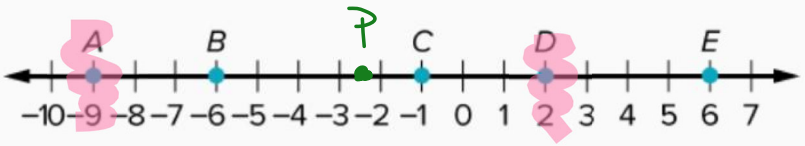


Point C has a weight of 3, and point E has a weight of 5.

C E
−1 6
3 5

$\frac{-3+30}{3+5} = \frac{\alpha}{8}$

3. Use the number line to find the coordinate of P that represents the weighted average of each set of points with the given conditions. (Example 1)



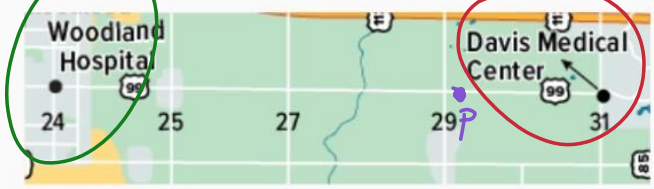
Point A has a weight of 2, and point D has a weight of 3.

-9 (2) 2 (3)

$\frac{-18+6}{2+3} = \frac{-12}{5}$

9. AMBULANCE

Some ambulances use weighted averages to find where to park between cities. Th weight of a hospital is determined by the average number of emergent patients tha need to be taken to the hospital on a daily basis. (Example 3)



2 (4) 1 (1)

$\frac{124+2}{4+1}$

29.

a. The Davis Medical Center usually has a weight 4 times that of Woodland Hospital. Where should the ambulance park?