Bell Work

Neatly stack your current book beside!! the book case, and grab a new book from under the board :)

Also, turn in homework

12.2 Subdividing (Partitioning) a Segment in a Given Ratio

Find the point on a directed line segment between 2 given points that partitions the segment in a given ratio.

Directed Line Segment- a segment between 2 points A and B with a specified direction, from A to B or from B to A.

To partition a directed line segment is to divide it into 2 segments with a given ratio.

4 Steps to partitioning a line segment

Step 1: Find the ratio a to b $\frac{a}{a+b}$

Step 2: Find the run (x) and the rise (y)

$(X_2 - X_1)$ $(Y_2 - Y_1)$

Step 3: Multiply ratio to run and rise creating NEW run/rise

Step 4: Add NEW run/rise to starting point

Find the coordinates of the point P that divides the directed line segment from A to B in the given ratio.

x_1, y_1 x_2, y_2 a b

A(-8, -7) B(8,5); 3 to 1

Step 1: $\frac{a}{a+b} = \frac{3}{3+1} = \frac{3}{4}$

Step 2: Run(x) = (8 − (−8)) = 16

Rise(y) = (5 − (−7)) = 12

Step 3: Run: $\frac{3}{4}(16) = 12$

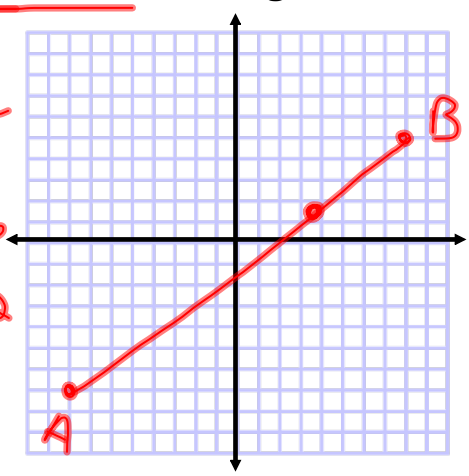
Rise: $\frac{3}{4}(12) = 9$

Step 4: A

(x) −8 + 12 = 4

(y) −7 + 9 = 2

(4, 2)



pg. 643 ex B a b

A(-4,4) B(2,1); 1 to 2

Step 1: $\frac{1}{1+2} = \frac{1}{3}$

Step 2: run(x) = 2 − (−4) = 6

rise(y) = 1 − 4 = −3

Step 3: run(x): $\frac{1}{3}(6) = 2$

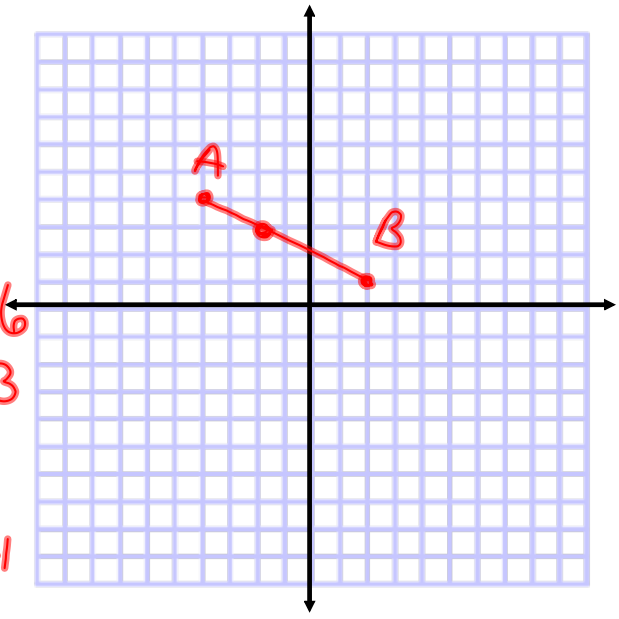
rise(y) = $\frac{1}{3}(-3) = -1$

Step 4: A

(x) −4 + 2 = −2

(y) 4 + (−1) = 3

(−2, 3)



Find the coordinates of the point P that divides the directed line segment from A to B in the given ratio.

5. $A(-6, 5), B(2, -3)$; 5 to 3

a b

Step 1: $\frac{5}{5+3} = \frac{5}{8}$

Step 2: Run (x) = $2-(-6)=8$

Rise (y) = $-3-5=-8$

Step 3: Run (x) = $\frac{5}{8}(8)=5$

Rise (y) = $\frac{5}{8}(-8)=-5$

Step 4: A

(x) $-6+5=-1$

(y) $5+(-5)=0$

$(-1, 0)$

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