

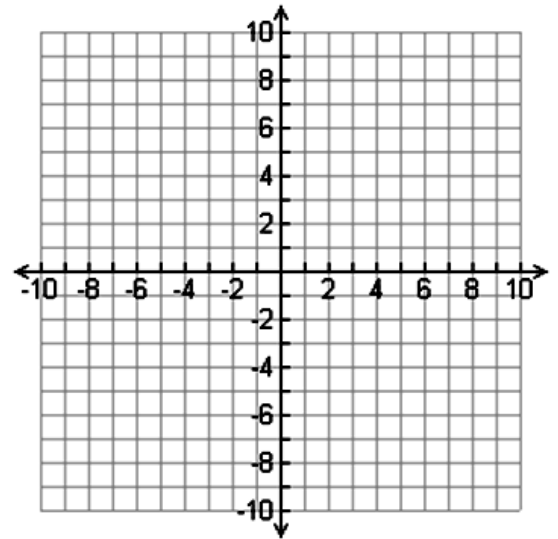
Partitioning a Segment Worksheet

Name _____

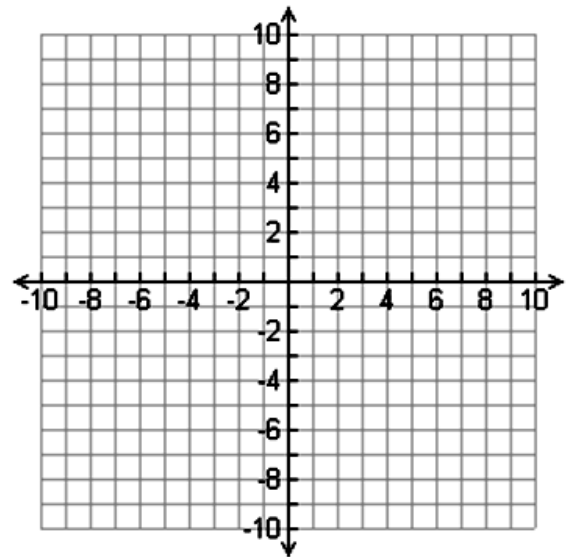
Date _____ Period _____

Answer the following questions and show all work!

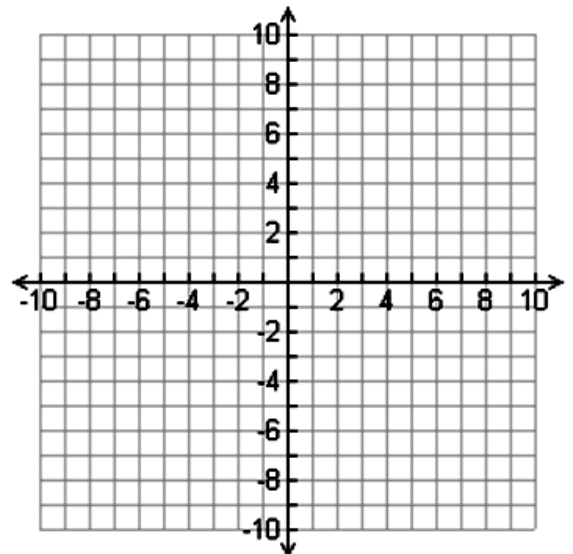
1. Find the coordinates of point P so that P partitions the directed segment from A(2, -2) to B(8, 10) in the ratio 5:1.



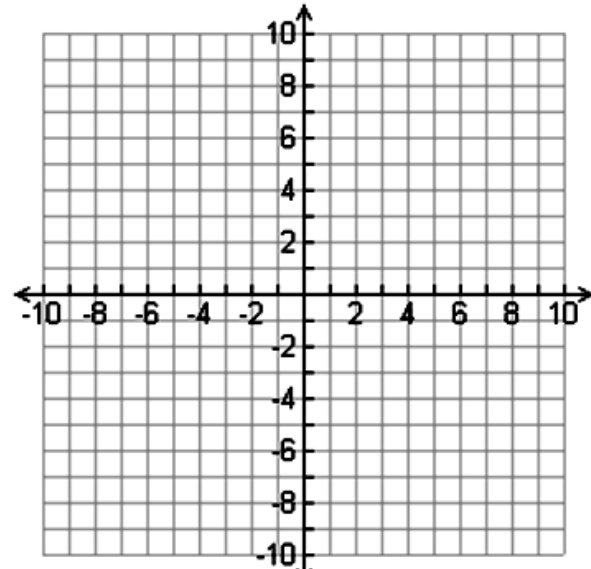
2. Find the coordinates of point P so that P partitions the directed segment from A(-5, 4) to B(7, -4) in the ratio 1:3.



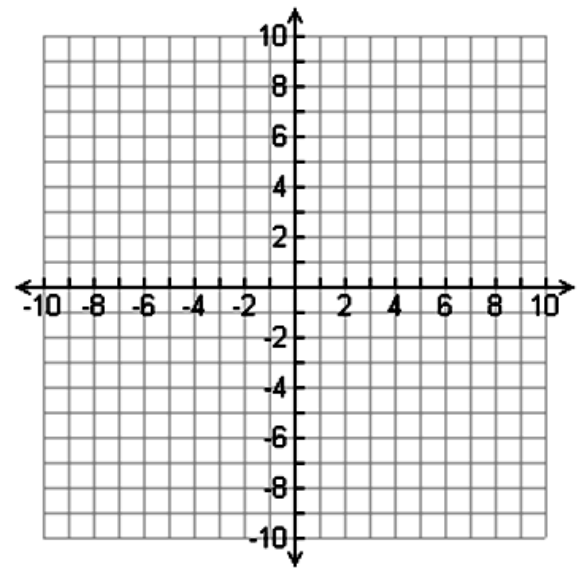
3. a) Find the coordinates of point P so that P partitions the directed segment from A(-9, -9) to B(5, -2) in the ratio 3:4.
b) Find the coordinates of point Q so that Q is $\frac{6}{7}$ of the distance from A to B.



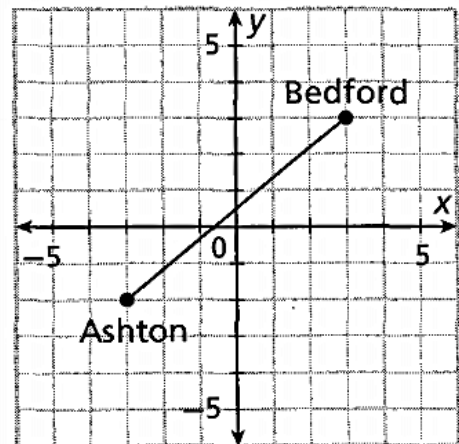
4. a) Find the coordinates of point P so that P partitions the directed segment from B(6, 10) to A(-8, -11) in the ratio $\frac{2}{5}$.
- b) Find the coordinates of point Q so that Q is $\frac{4}{7}$ of the distance from B to A.



5. a) Find the coordinates of point P that lies along the directed segment from C(-3, -2) to D(6, 1) and partitions the segment in the ratio 2 to 1.
- b) Find the coordinates of point R so that R is $\frac{1}{3}$ of the distance from C to D.



6. The map below shows a straight highway between the two towns of Ashton and Bedford imposed on a coordinate plane. Highway planners want to build two rest stops between the two towns so that the two rest stops divide the highway into three equal parts. What are the coordinates of the points where the rest stops should be located?



Segment Partitioning Practice Continued... (adapted from HMH 12.2)

SHOW YOUR WORK ON YOUR OWN GRAPH PAPER

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

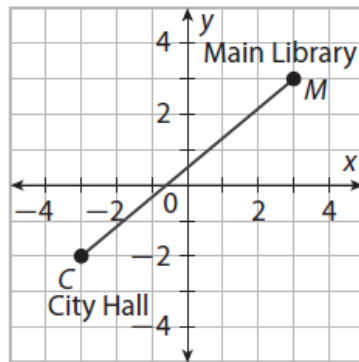
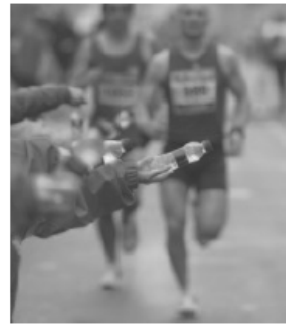
5. $A(-3, -2), B(12, 3); 3$ to 2

6. $A(-1, 5), B(7, -3); 7$ to 1

7. $A(-1, 4), B(-9, 0); 1$ to 3

8. $A(7, -3), B(-7, 4); 3$ to 4

19. The course for a marathon includes a straight segment from city hall to the main library. The planning committee wants to put water stations along this part of the course so that the stations divide the segment into three equal parts. Find the coordinates of the points at the which the water stations should be placed.



21. The directed segment from J to K is shown in the figure.

Points divide the segment from J to K in each of the following ratios. Which points have integer coordinates? Select all that apply

- A. 1 to 1
- B. 2 to 1
- C. 2 to 3
- D. 1 to 3
- E. 1 to 2

