

Directed Line Segment Worksheet

Name: _____

Directions: Find the partitioning point for each problem. You must show your work for all steps to receive credit

1. Given the point A(-3, -2) and B(6, 1), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 2:1. $x: (6+3)(\frac{2}{3}) - 3 = 9(\frac{2}{3}) - 3 = 6 - 3 = 3$ $y: (1+2)(\frac{2}{3}) - 2 = 3(\frac{2}{3}) - 2 = 2 - 2 = 0$ (3, 0)

2. Given the points A(-3, -4) and B(2, 0), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 2 to 3. $x: (2+3)(\frac{2}{5}) - 3 = 5(\frac{2}{5}) - 3 = 2 - 3 = -1$ $y: (0-4)(\frac{2}{5}) - 4 = 4(\frac{2}{5}) - 4 = \frac{8}{5} - 4 = -2.4$ (-1, -2.4)

3. Given the points A(-2, 5) and B(2, 3), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 4 to 1. $x: (2+12)(\frac{4}{5}) - 2 = 4(\frac{4}{5}) - 2 = \frac{16}{5} - 2 = 1.2$ $y: (3-5)(\frac{4}{5}) + 5 = -2(\frac{4}{5}) + 5 = -\frac{8}{5} + 5 = 3.4$ (1.2, 3.4)

4. Given the points A(5, -1) and B(-5, 3), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 1:3. $x: (-5-5)(\frac{1}{4}) + 5 = -10(\frac{1}{4}) + 5 = -\frac{10}{4} + 5 = 2.5$ $y: (3+1)(\frac{1}{4}) - 1 = 4(\frac{1}{4}) - 1 = 1 - 1 = 0$ (2.5, 0)

5. Given the points A(-2, 1) and B(4, 5), find the coordinates of the point P on directed line segment AB that partitions AB in the ratio 5:2. $x: (4+2)(\frac{5}{7}) - 2 = 6(\frac{5}{7}) - 2 = \frac{30}{7} - 2 = 2.3$ $y: (5-1)(\frac{5}{7}) + 1 = 4(\frac{5}{7}) + 1 = \frac{20}{7} + 1 = 3.9$ (2.3, 3.9)

6. Given the point A(-3, -2) and B(6, 1), find the coordinates of the point P on directed line segment BA that partition BA in the ratio 3:1.

7. Given the points A(-3, -4) and B(2, 0), find the coordinates of the point P on directed line segment BA that partitions BA in the ratio 1 to 4.

8. Given the points A(-2, 5) and B(2, 3), find the coordinates of the point P on directed line segment BA that partitions BA in the ratio 3 to 2.

9. Given the points A(5, -1) and B(-5, 3), find the coordinates of the point P on directed line segment BA that partitions BA in the ratio 1:2.

10. Given the points A(-2, 1) and B(4, 5), find the coordinates of the point P on directed line segment BA that partitions BA in the ratio 3:6

DON'T DO

11. Find the coordinates of P so that P partitions the segment AB in the ratio 5:1 if A(2, 4) and B(8, 10). $x: (8-2)(\frac{5}{6}) + 2 = 7$ $y: (10-4)(\frac{5}{6}) + 4 = 9$ (7, 9)

12. Find the coordinates of P so that P partitions the segment AB in the ratio 1 to 3 if A(-5, 4) and B(7, -4). $x: (7+5)(\frac{1}{4}) - 5 = -2$ $y: (-4-4)(\frac{1}{4}) + 4 = 2$ (-2, 2)

13. Find the coordinates of P so that P partitions the segment AB in the ratio 3:4 if A(-9, -9) and B(5, -2). $x: (5+9)(\frac{3}{7}) - 9 = -3$ $y: (-2+9)(\frac{3}{7}) - 9 = -6$ (-3, -6)

14. Find the coordinates of P so that P partitions the segment AB in the ratio 5 to 2 if A(-8, -2) and B(6, 19). $x: (6+8)(\frac{5}{7}) - 8$ $y: (19+2)(\frac{5}{7}) - 2$

15. Find the coordinates of P so that P partitions the segment AB in the ratio 7 to 2 if A(-5, 4) and B(-8, -2). $x: (-8+5)(\frac{7}{9}) - 5 = -7.3$ $y: (-2-4)(\frac{7}{9}) + 4 = -.66$ (-7.3, -.66)