GEOMETRY · CLASSWORK

SCORE / 25

Partition a Segment

01 Part A · Practice

The point $\frac{a}{b}$ of the way from $A(x_1, y_1)$ to $B(x_2, y_2)$ is $\left(x_1 + \frac{a}{b}(x_2 - x_1),\ y_1 + \frac{a}{b}(y_2 - y_1)\right)$.

EXAMPLE

Find P that partitions $\overline{AB}$, $A(1, 2)$, $B(10, 8)$, in the ratio $1 : 2$.

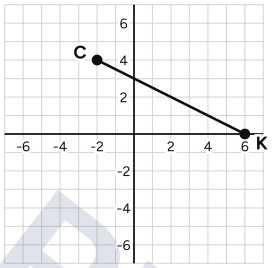
1. Ratio $1 : 2$ means $\frac{1}{3}$ of the way.

2. $x = 1 + \frac{1}{3}(9) = 4$.

3. $y = 2 + \frac{1}{3}(6) = 4$, so $P(4, 4)$.

1 ●○○ $X(1, -4)$ and $G(1, -12)$. Find point J that is $\frac{3}{4}$ of the way from X to G.

2 ●○○ Find the point that is $\frac{3}{4}$ of the way from K to C.



3 ●○○ On a number line, Q is at -15 and F is at -39. Point T is $\frac{1}{4}$ of the way from Q to F. Find the coordinate of T.

4 ●○○ $C(3, -8)$ and $Z(0, -11)$. Point J partitions $\overline{CZ}$ in the ratio $2 : 1$ (from C). Find J.

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Preview - the full worksheet and its answer key are at primeworksheet.com