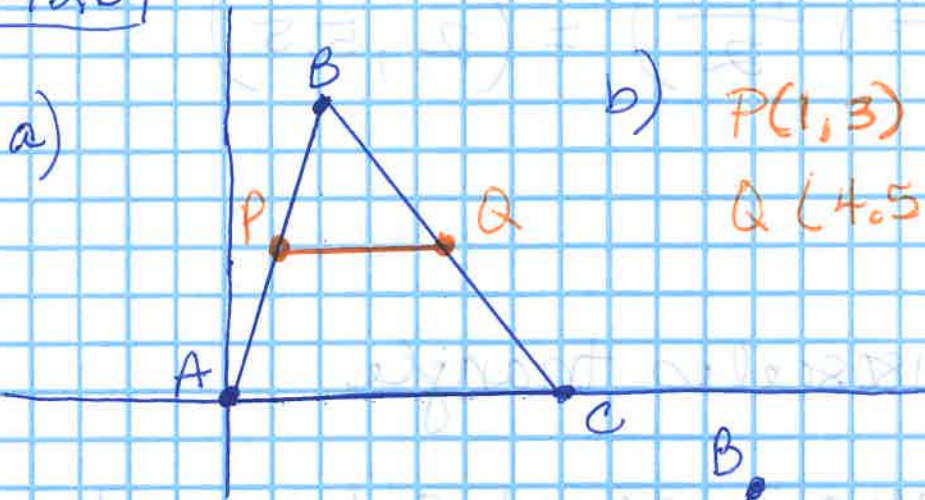


7.3.2 How can I find the midpoint?

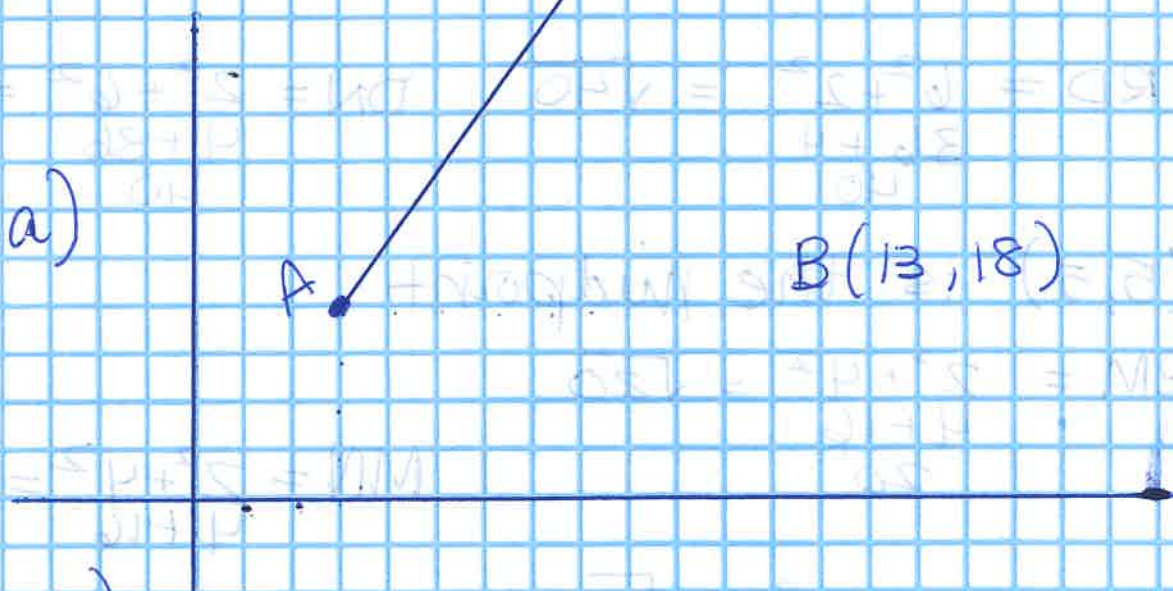
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b) $P(1, 3)$
 $Q(4.5, 3)$

c) $\overline{PQ} = 3.5$ $\overline{AC} = 7$
 $m \text{ of } PQ = 0$ $m \text{ of } AC = 0$

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$B(13, 18)$

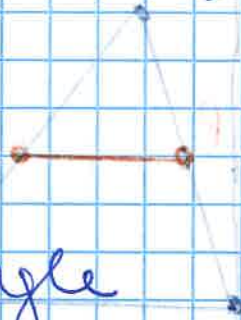
b) \overline{KL}
 $K(2, 125)$
 $L(98, 15)$

midpoint $(50, 70)$

c) $(-5, 7)(9, 4)$

$$\left(\frac{-5+9}{2}, \frac{7+4}{2} \right) = (2, 5.5)$$

7-128



a) Right isosceles triangle

b) must have 2 equal sides and a right angle

c) m of $\overline{RD} = -3$ m of $\overline{DN} = \frac{1}{3}$
 $\overline{RD} \perp \overline{DN}$

$$RD = \frac{6^2 + 2^2}{36 + 4} = \sqrt{40}$$

$$DN = \frac{2^2 + 6^2}{4 + 36} = \sqrt{40}$$

d) $M(5, 5)$ is the midpoint

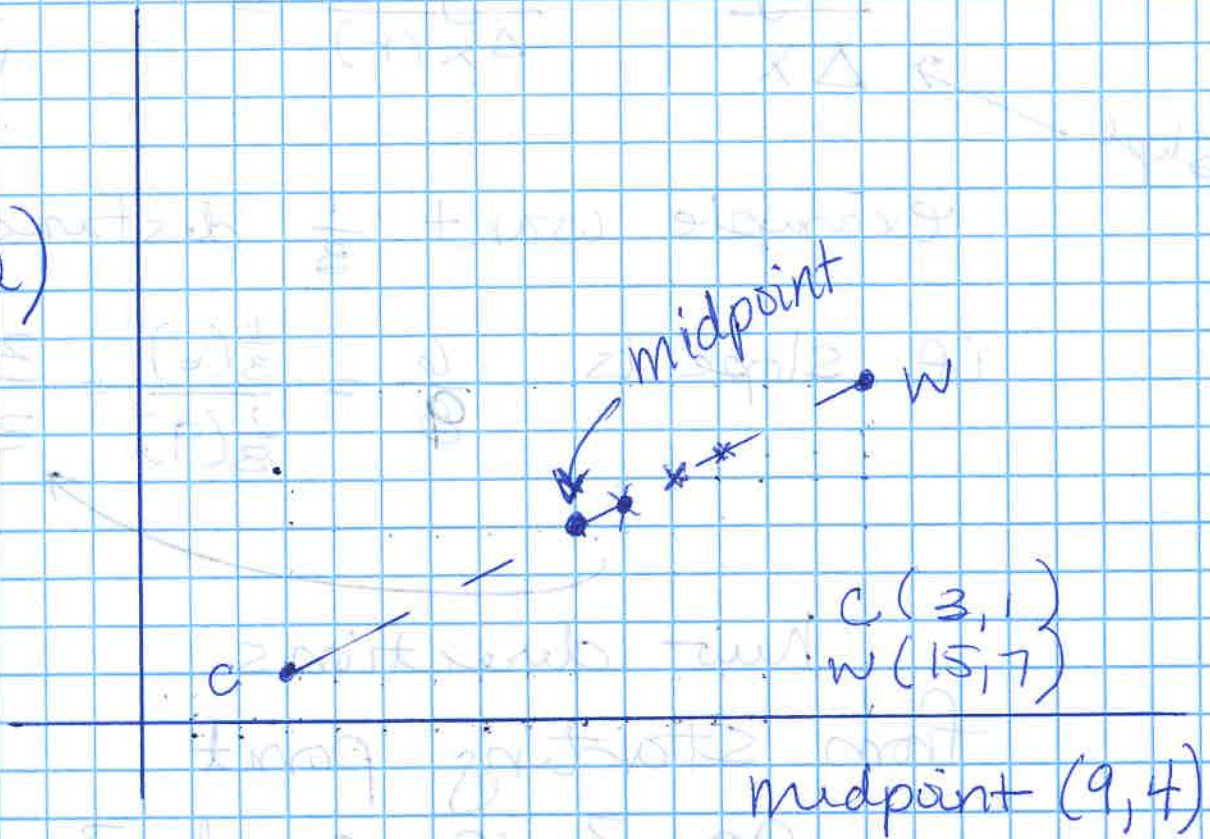
$$RM = \frac{2^2 + 4^2}{4 + 16} = \sqrt{20}$$

$$MN = \frac{2^2 + 4^2}{4 + 16} = \sqrt{20}$$

$$DM = \frac{4^2 + 2^2}{16 + 4} = \sqrt{20}$$

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a)



$$\frac{6^2 + 3^2}{\sqrt{45}}$$

each town is $\sqrt{45}$ miles from each town

b)

$$\frac{6}{12} \text{ rise} \\ \frac{3}{4} \text{ run}$$

$$\frac{1}{3} \text{ of the way } \frac{2}{4} \quad (11, 5)$$

$$\frac{1}{4} \text{ of the way } \frac{1.5}{3} \quad (12, 5.5)$$

$$\frac{2}{3} \text{ of the way } \frac{4}{3} \text{ rise } (11, 5) \\ \frac{2}{3} \text{ run}$$

$$\frac{2}{3}(6), \frac{2}{3}(12)$$

c)

find $\frac{\Delta y}{\Delta x}$

slope

$$\frac{\Delta y(r)}{\Delta x(r)} = \frac{\text{new rise}}{\text{run}}$$

example want $\frac{1}{3}$ distance

if slope is $\frac{6}{9} = \frac{\frac{1}{3}(6)}{\frac{1}{3}(9)} = \frac{2}{3}$

new directions

from starting point

go 2 up and 3 over