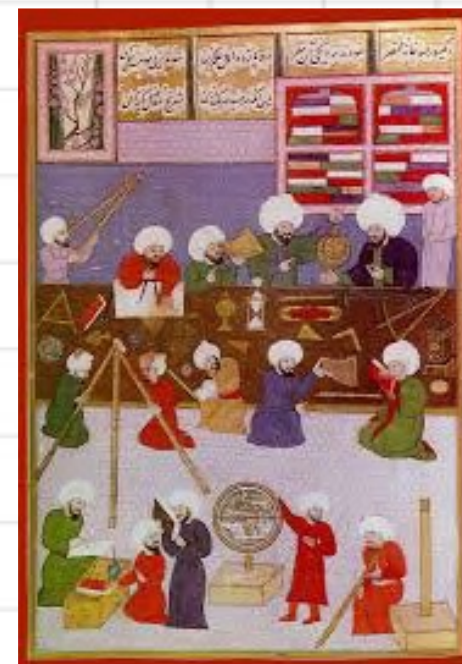


GEOMETRIA ANALÍTICA

GEOMETRIA



ÁLGEBRA



DESCARTES



GEOMETRIA

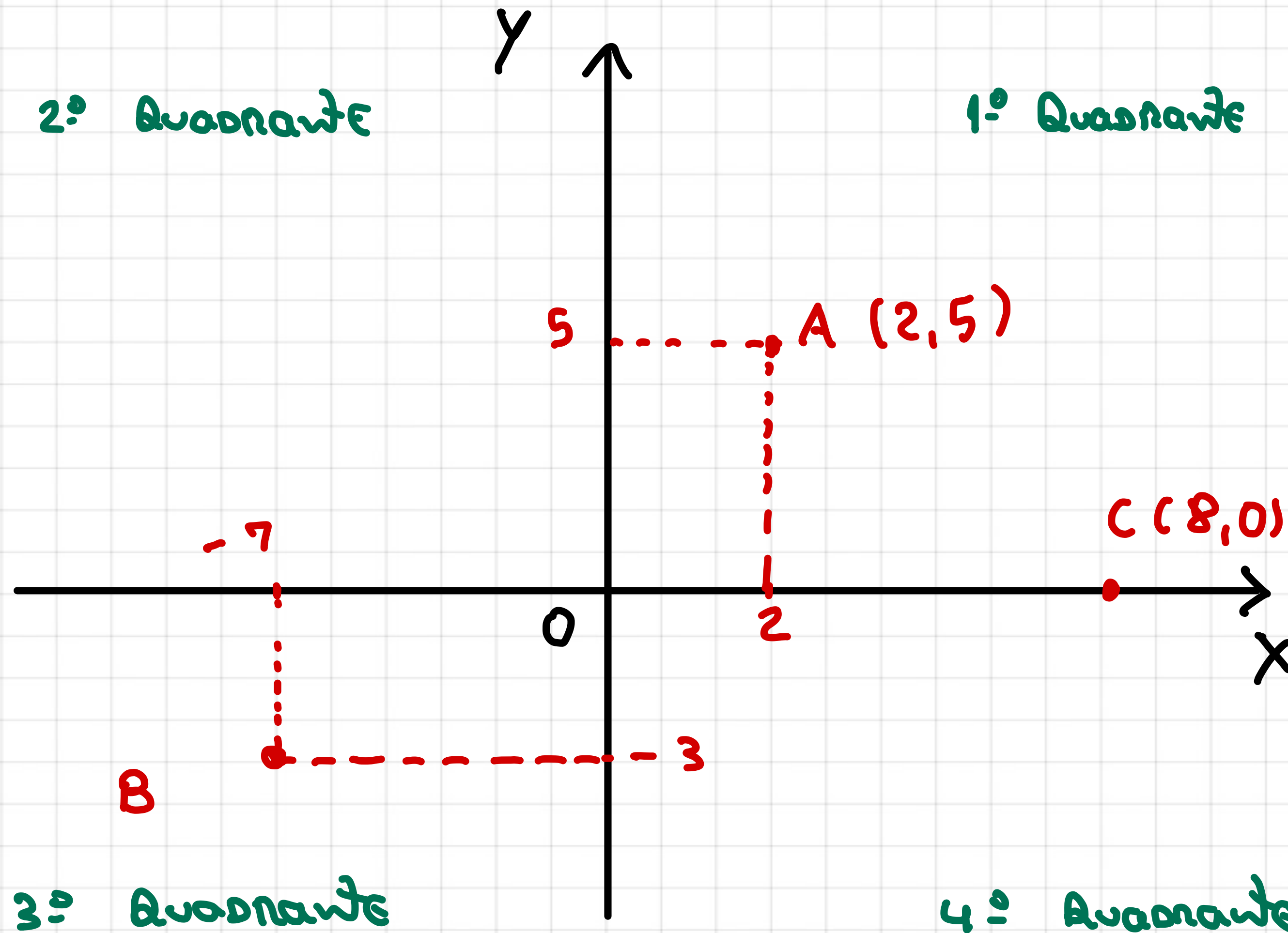
ANALÍTICA

PLANO

CARTESIANO

2º Quadrante

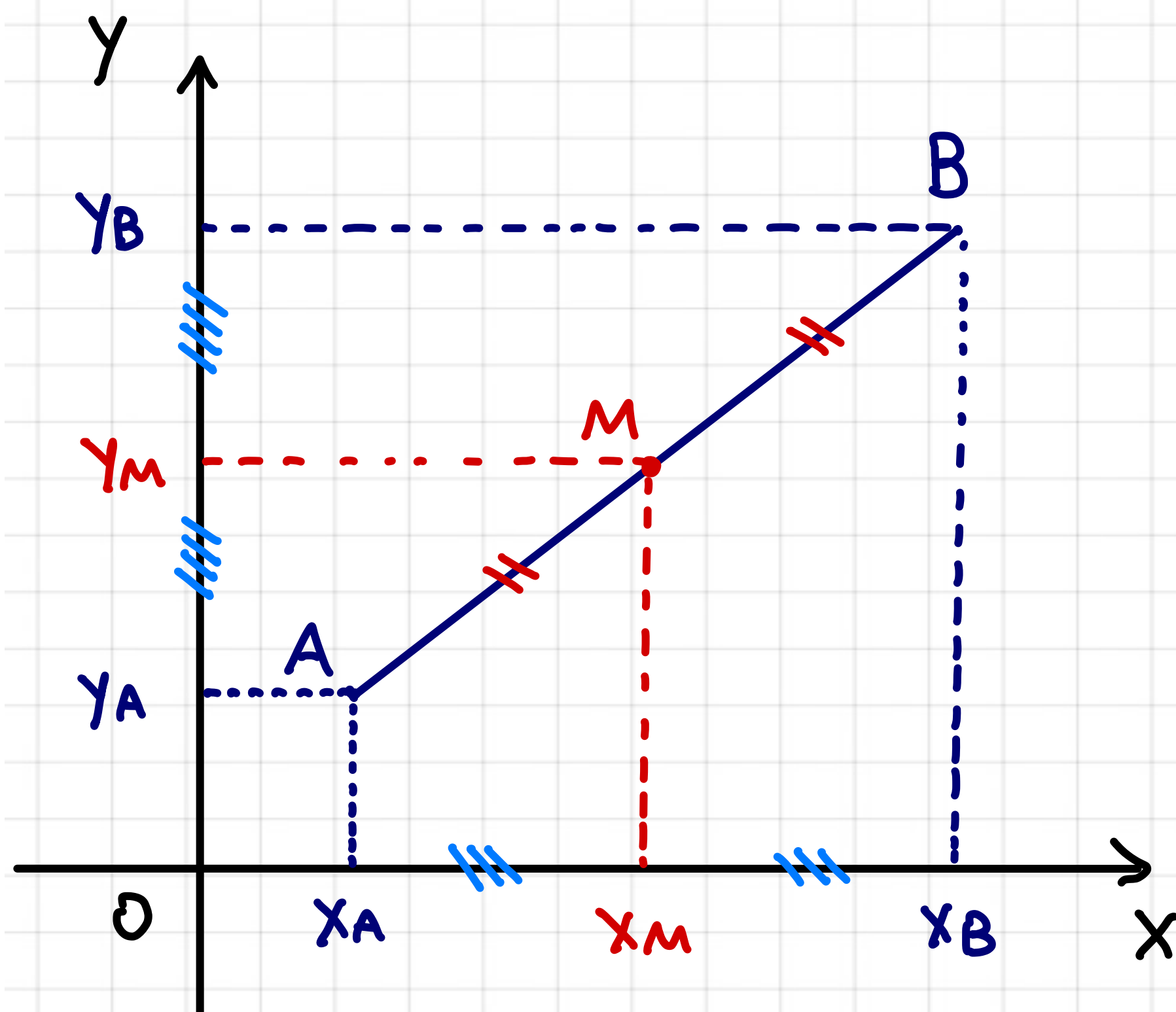
1º Quadrante



Conceitos Básicos

① Ponto Médio de um Segmento

$$M(x_M, y_M)$$



$$x_M = \frac{x_A + x_B}{2}$$

$$y_M = \frac{y_A + y_B}{2}$$

Ex: Determine o ponto médio do segmento AB, sendo $A = (3, 8)$ e $B = (17, -4)$

$$M = (x_M, y_M)$$

$$x_M = \frac{x_A + x_B}{2} = \frac{3 + 17}{2} = 10$$

$$y_M = \frac{y_A + y_B}{2} = \frac{8 - 4}{2} = 2$$

$$M = (10, 2)$$

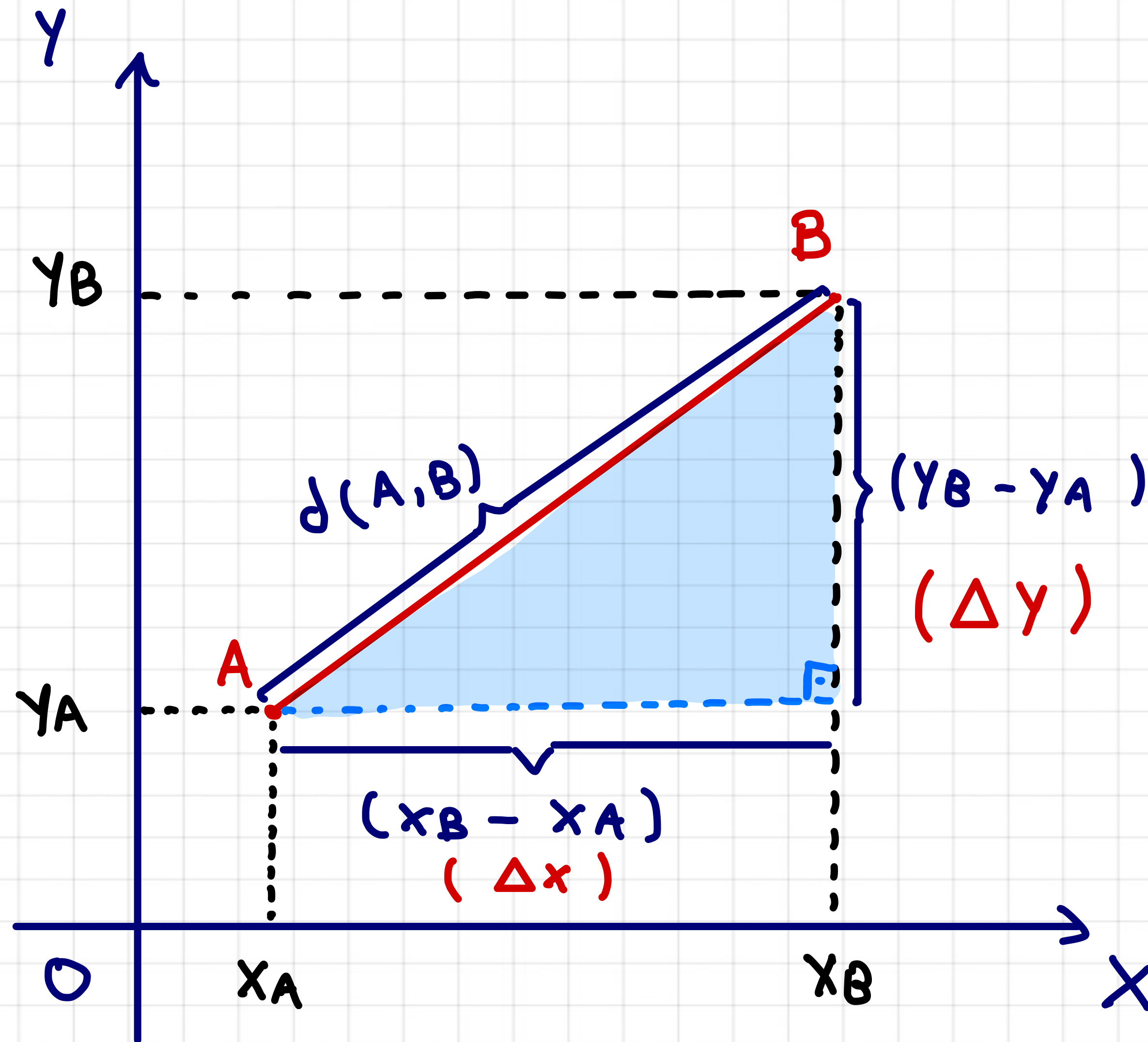
② Distância entre dois pontos

Pitágoras

$$d(A,B)^2 = (x_B - x_A)^2 + (y_B - y_A)^2$$

$$d(A,B) = \sqrt{(x_B - x_A)^2 + (y_B - y_A)^2}$$

$$d(A,B) = \sqrt{(\Delta x)^2 + (\Delta y)^2}$$



Ex:

Para cada par de pontos, determine:

I) As coordenadas do ponto médio do segmento formado

II) A distância entre os pontos

a) $A(2, 5)$ e $B(6, 0)$

Ponto médio:

$$x_M = \frac{x_A + x_B}{2} = \frac{2 + 6}{2} = \frac{8}{2} = 4$$

$$y_M = \frac{y_A + y_B}{2} = \frac{5 + 0}{2} = 5/2$$

$$M(4, 5/2)$$

Continuar ...

b) $C(3, -4)$ e $D(2, 1/3)$

c) $E(1/5, 9)$ e $F(-1, 6)$