

Distance d'un point à une droite

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Exercice 1. (a) $A(7, 5)$ $B(2, 3)$ $C(6, -7)$

$$m_{AB} = \frac{3-5}{2-7} = -\frac{2}{-5} = \frac{2}{5}$$

$$m_{BC} = \frac{-7-3}{6-2} = -\frac{10}{4} = -\frac{5}{2}$$

$$m_{AC} = \frac{-7-5}{6-7} = -12$$

$$m_{AB} \cdot m_{BC} = \frac{2}{5} \cdot \left(-\frac{5}{2}\right) = -1 \Rightarrow AB \perp BC$$

Triangle rectangle

(b) $A(3, -2)$ $B(-2, 3)$ $C(6, 4)$

$$m_{AB} = \frac{3-(-2)}{-2-3} = -1$$

$$m_{BC} = \frac{4-3}{6-(-2)} = \frac{1}{8}$$

$$m_{AC} = \frac{4-(-2)}{6-3} = 2$$

$AB \not\perp AC$ $AB \not\perp BC$ $AC \not\perp BC$

2a) $A(3, 8)$ $B(-11, 3)$ $C(-8, -2)$

$$|AB| = \sqrt{(3-(-11))^2 + (8-3)^2} = \sqrt{224}$$

$$|AC| = \sqrt{(-8-3)^2 + (-2-8)^2} = \sqrt{224}$$

$|AB| = |AC| \Rightarrow$ triangle isocèle.

b) $A(6, 7)$ $B(-8, -1)$ $C(-2, -7)$

$$|AB| = \sqrt{(-8-6)^2 + (-1-7)^2} = 2\sqrt{65}$$

$$|AC| = \sqrt{(-2-6)^2 + (-7-7)^2} = 2\sqrt{65}$$

$|AB| = |AC| \Rightarrow$ triangle isocèle.