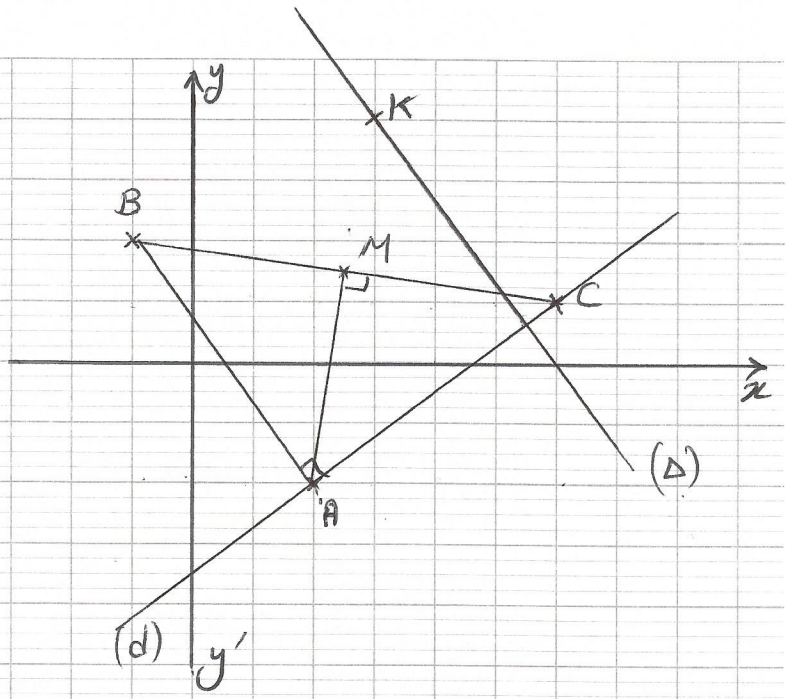
§ 3rd-exercise:



1) ✓

2) A belongs to (d) if coordinates of A satisfy equation of (d).

A(2, −2)

(d): $y = \frac{3}{4}x - \frac{7}{2}$.

$-2 \overset{?}{=} \frac{3}{4}(2) - \frac{7}{2}$

$-2 \overset{?}{=} \frac{3}{2} - \frac{7}{2}$.

$-2 \overset{?}{=} -\frac{4}{2}$.

$-2 = -2$ ✓

Thus, A belongs to (d).

Similarly for pt C.

$1 \overset{?}{=} \frac{3}{4}(6) - \frac{7}{2}$

$1 \overset{?}{=} \frac{9}{2} - \frac{7}{2}$

$1 = 1$ ✓

Thus, C belongs to (d).

3a) $M\left(\frac{5}{2}, m\right)$

Since abscissa of M is constant.

then as ordinate of M varies pt M describes a st. line parallel to y-axis of eqn.

$\boxed{x = \frac{5}{2}}$.

b) Slope of BC: $a_{(BC)} = \frac{y_B - y_C}{x_B - x_C}$

$= \frac{2 - 1}{-1 - 6}$

$\boxed{a_{(BC)} = \frac{-1}{7}}$.

$a_{(AM)} = \frac{y_M - y_A}{x_M - x_A}$.

$= \frac{m + 2}{\frac{5}{2} - \frac{2}{1}}$

$= \frac{m + 2}{\frac{1}{2}}$

$\boxed{a_{(AM)} = 2m + 4}$