

3) a. $A(m+3; 2)$

Since y_A is const, then as m varies pt A describes a st. line parallel to x -axis of eqn $y=2$. False.

b. for $m=1$ then $A(4, 2)$

If A belongs to (d): $2y=x$
then its coordinates should satisfy eqn of (d).

$$2(2) \stackrel{?}{=} 4$$

$$4 = 4$$

Thus, A belongs to (d) True.

2nd exercise:

1) $(x+y)^2 - (x-y)^2 = x^2 + 2xy + y^2 - (x^2 - 2xy - y^2)$
 $= 4xy$.

2) $\begin{cases} x+y=22 \dots \textcircled{1} \\ x \cdot y = 112 \dots \textcircled{2} \end{cases}$

sub eqns $\textcircled{1} + \textcircled{2}$ in $(x+y)^2 - (x-y)^2 = 4xy$ to get

$$(22)^2 - (x-y)^2 = 4(112)$$

$$484 - (x-y)^2 = 448$$

$$\text{Thus, } (x-y)^2 = 36$$

now, $(x-y)^2 = 36$ (radical both sides)

$$\pm(x-y) = 6$$

$$x-y = \pm 6$$

but since sum and product of $x+y$ is (+)ve
then $x-y = +6$ accepted.