22nd july

22 July 2021 11:04

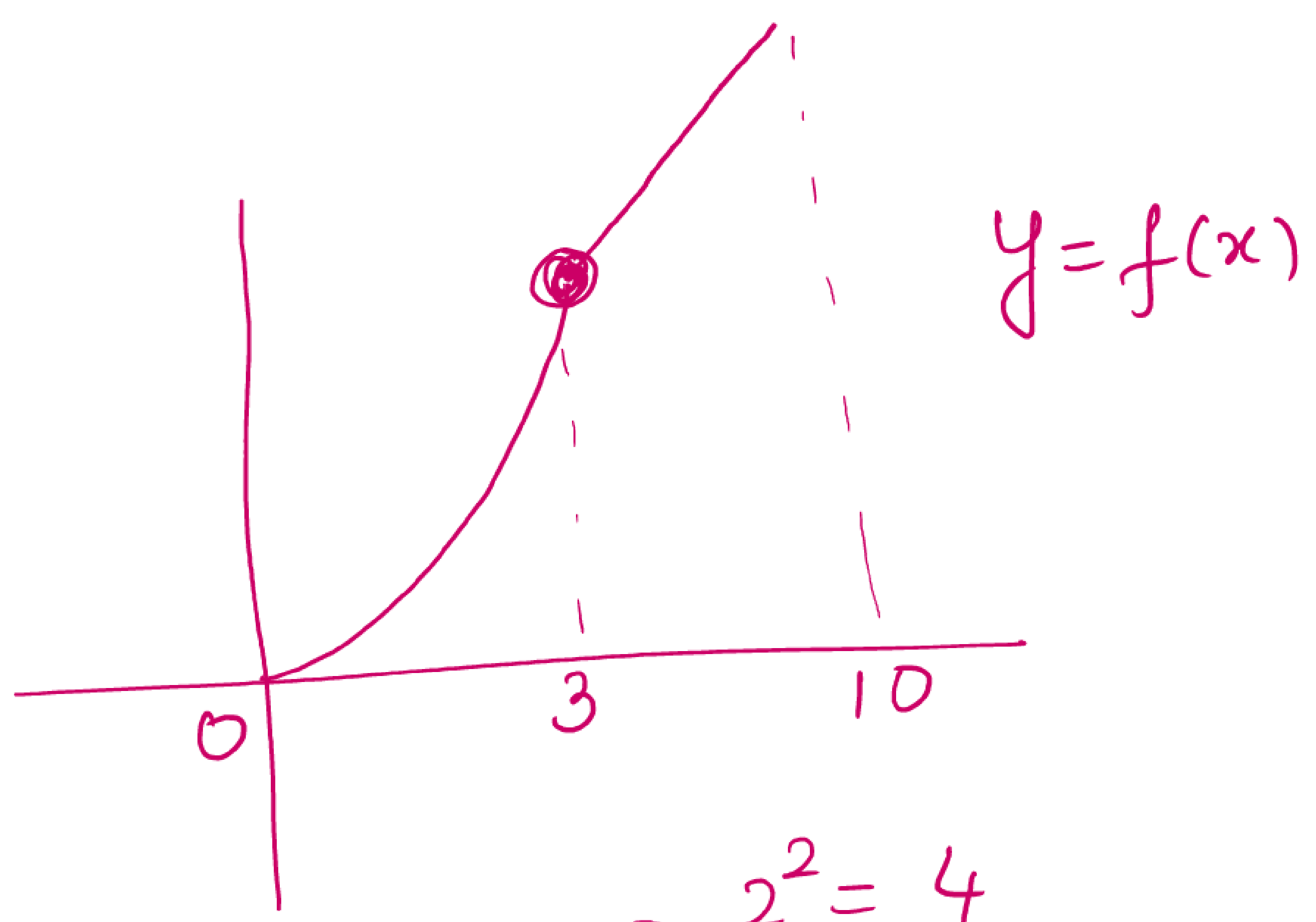
Misc.

(Q1)

$$f(x)=\begin{cases} x^2, & x\in[0,3] \\ 3x, & x\in[3,10] \end{cases}$$

$\underline{\underline{x=3}}$ $\quad f(x) = 3^2 = 9$

$= 3(3) = 9$



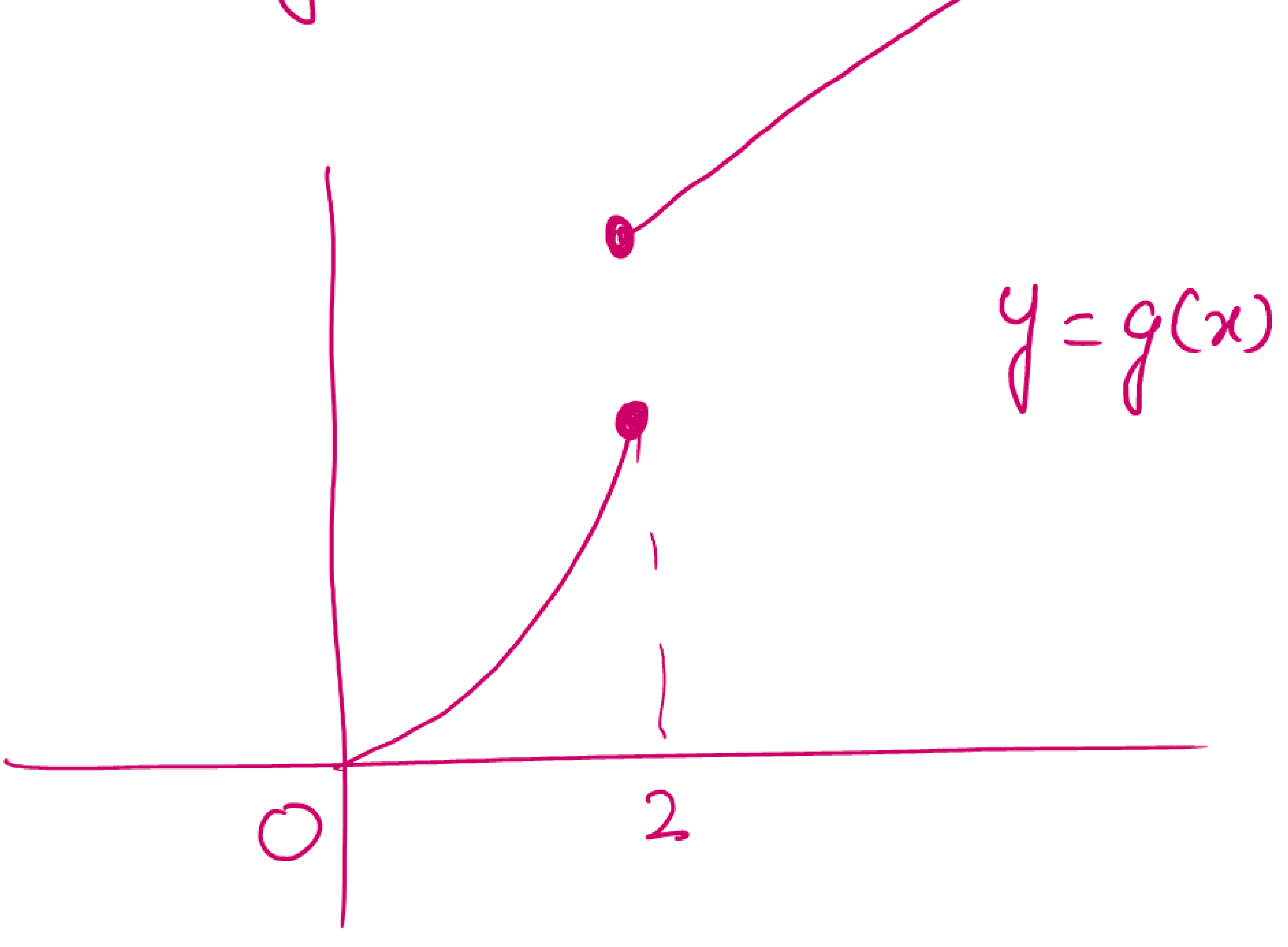
$g(2) \rightarrow 2^2 = 4$

$g(2) \rightarrow 3(2) = 6$

$x=2, \quad g(2) \rightarrow 4$

$g(2) \rightarrow 6$

$f(x) \rightarrow$ function
$g(x) \rightarrow$ relation.



⑦ $f+g = x+1+2x-3$

$= 3x-2$

$f-g = (x+1)-(2x-3)$

$= -x+4$

$\frac{f}{g} = \frac{x+1}{2x-3}$

⑧ $f(x) = ax+b$

I, Z → integers

$f = \{(1,1), (2,3), (0,-1), (-1,-3)\}.$

$\overset{\downarrow}{x}\ \overset{\downarrow}{y}$

$y=1, x=1$

$\boxed{1 = a(1)+b}$ — ①

$3 = a(2)+b$ — ②

$a=2, b=-1$

⑨ (i) $\boxed{a=b^2}$

$(a,a) \Rightarrow a=a^2$

$\underline{\underline{a=0,1}}$

$\underline{\text{Not true}}$

(ii) $a=b^2$

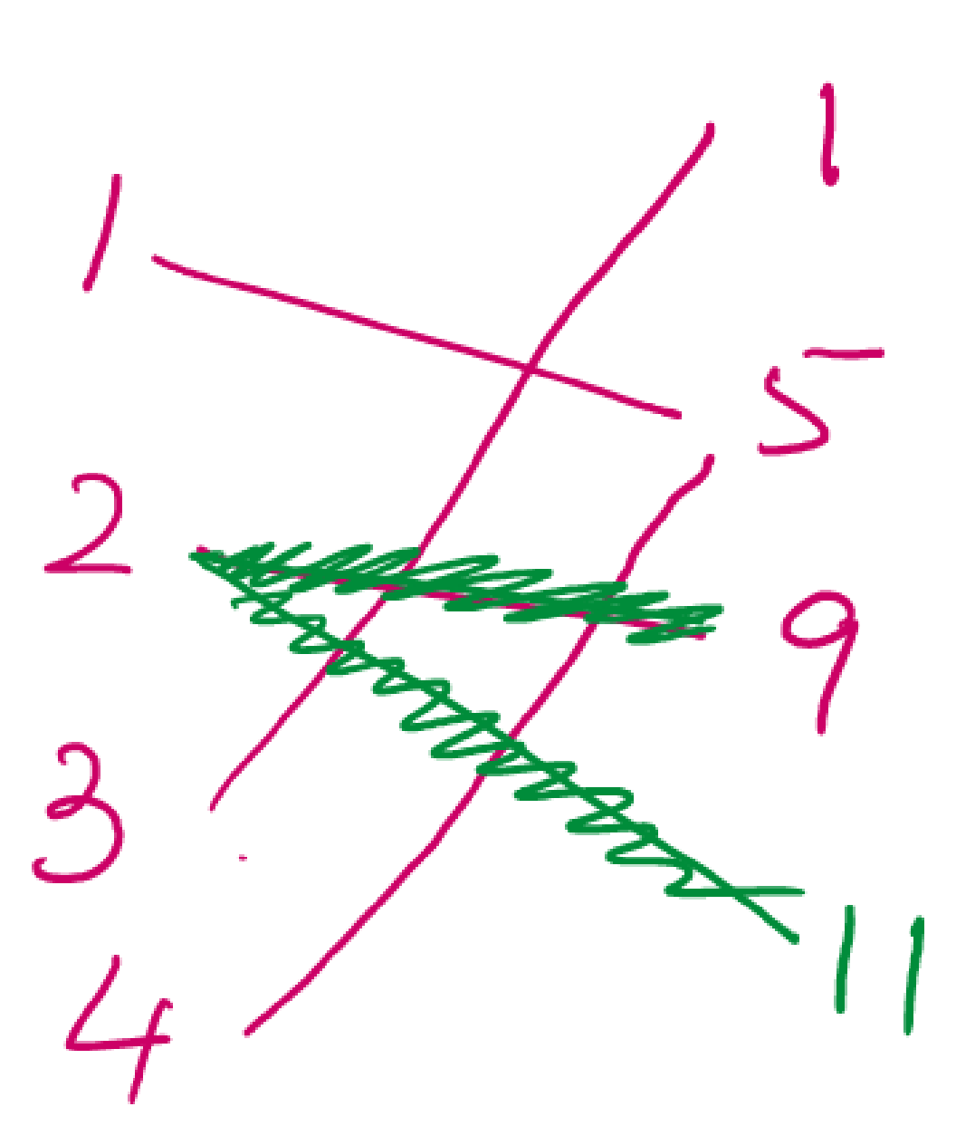
$\Rightarrow b=a^2$ (Not true)

(iii) $\left.\begin{array}{l} a=b^2 \\ b=c^2 \end{array}\right\} \Rightarrow \underline{\underline{a=c^4}}$

$a \neq c^2$

Not true.

~~⑩~~



⑪ $y=a+b$

$x=ab.$

$a=-1, b=-2 \longrightarrow a+b=-3$

$x=ab=2$

$a=1, b=2$

$x=ab=2, a+b=3.$

$\underline{\underline{x=2}} \rightarrow -3$

$\rightarrow 3.$

Not a function

⑫ $f: Ⓐ \rightarrow N$

$f(n) =$ highest prime factor of n.

$f(9) = 3$

$f(10) = 5$

$f(11) = 11$

$f(12) = 3$

$f(13) = 13$

$f = \{(9,3), (10,5), (11,11), (12,3), (13,13)\}$

Range $= \{3, 5, 11, 13.\}$