Apptitude Assignment - 3

1) $2x^2 - 5x + 2 = 0 \rightarrow$ roots are $(1, 1)$ $\therefore 1+1 = 2 \times 1$

$x^2 - 2x + 1 = 0 \rightarrow$ roots are $(2, 2)$ $\therefore 2+2 = 2 \times 2$

$4 = 4$

2) $2x + 3y = 12 \rightarrow (2, 3)$

$x = 2, y = 3$

$L.H.S = 2 \times 2 + 3 \times 3$

$= 4 + 9 = 13$

$13 \neq 12$ $\quad L.H.S \neq R.H.S$

$\therefore (2, 3)$ is not a solution to the equation

3) $(1,1)$, $(2,2)$ & (x, y)

Slope of $(1,1)$ & $(2,2)$ $\therefore \dfrac{y_2 - y_1}{x_2 - x_1}$

$= \dfrac{2-1}{2-1} = 1$

For (x, y) to be collinear the slope should be same

$\dfrac{y_2 - y_1}{x_2 - x_1} = 1$

$\dfrac{y - 1}{x - 1} = 1$

$y - 1 = x - 1$

$y - x = -1 + 1$

$x = y$

So points where $x = y$, those coordinates will be collinear

for eg $(3, 3)$, $(4, 4)$, $(5, 5)$ ... etc

4)
$$\frac{a^3+b^3}{a^3-b^3} = \frac{1}{1}$$

i.e $a^3+b^3 = a^3-b^3$

$2b^3 = 0$

$\therefore b = 0$

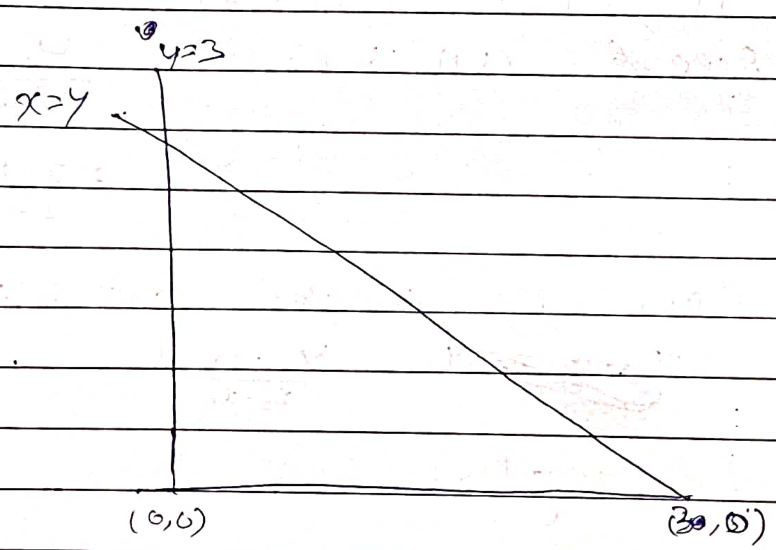
$a^3+b^3 = a^3-b^3$

Putting $b=0$

$a^3 = a^3$

this eqn holds true for all real values of a, where $b=0$.

5) $y=x$, y-axis, $y=3$



Co-ordinates are $(0,0)$, $(0,3)$, $(3,3)$

Area $= \frac{1}{2} \times b \times h$

$= \frac{1}{2} \times 3 \times 3$

$= 4.5$ sq