Question 1

A = apple
B = banana
C = cherry

D 1. $a + b + c = 10$

$a + 2b + c = 15$

$a + b + 2c = 12$

Matrix form

$$\begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 1 \\ 1 & 1 & 2 \end{bmatrix} = \begin{bmatrix} 10 \\ 15 \\ 12 \end{bmatrix}$$

Question 2

$$y=(x-a)^2+(x-b)^2$$

where $a=1$ and $b=5$

$$y=(x-1)^2+(x-5)^2$$

$$\frac{dy}{dx}=2(x-1)+2(x-5)$$

$$=4x-12$$

$$=4(x-3)$$

If $\frac{dy}{dx}=0$,

$$4(x-3)=0$$

$$x=3$$

So, try:

$$y=(3-1)^2+(3-5)^2$$

$$=4+4=8$$

lowest y value would be 8.