Assignment 2.1 #ใช้ชีวิตให้สนุก #เติมความสุขไปด้วยกัน YEL LIN 6520242

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

① – $x + y + z = 10$

② – $x + 2y + z = 15$

③ – $x + y + 2z = 12$

$x = 10 - y - z$ – ①

$x = 15 - 2y - z$ – ②

Eq ①, ②

$10 - y - z = 15 - 2y - z$

$2y - y = 15 - 10$

$y = 5$

Eq ①, ③

$z = 10 - x - y$ – ①

$2z = 12 - x - y$

$z = \frac{12 - x - y}{2}$ – ③

$10 - x - y = \frac{12 - x - y}{2}$

$10 - x - 5 = \frac{12 - x - 5}{2}$

$5 - x = \frac{7 - x}{2}$

Note

$10 - 2x = 7 - x$

$3 = -x + 2x$

$3 = x$

$x = 3$

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$x = 3$, $y = 5$ in Eq ①

$x + y + z = 10$
$3 + 5 + z = 10$
$z = 2$

Apple, $x = 3$
Banana, $y = 5$
Cheery, $z = 2$

Eq ①

$x + y + z = 10$
$3 + 5 + 2 = 10$
$10 = 10$

Eq ②

$x + 2y + z = 15$
$3 + 2 \times 5 + 2 = 15$
$3 + 10 + 2 = 15$
$15 = 15$

Eq ③

$x + y + 2z = 12$
$3 + 5 + 2 \times 2 = 12$
$8 + 4 = 12$
$12 = 12$

Assignment 2.2

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

as 1, $b = 5$

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

$= 1 - 2x + x^2 + 25 - 10x + x^2$

$= 2x^{2} - 12x^{1} + 26$

$\frac{dy}{dx} = 2 \cdot 2x^{1} - 12 \cdot 1 x^{0} + 0$

$\frac{dy}{dx} = 4x - 12$

For critical point $\frac{dy}{dx} = 0$, the slope of function is 0

$4x - 12 = 0$

$4x = 12$

$x = 3$

The value of x that minimizes $y = 3$

Note