

our given dataset

o	Weight	Price
1	2	35
2	4	60
3	5	20
4	3	50
5	6	50
6	5	55
7	7	60

We know, $Y = mx + c$

$\xrightarrow{\text{slope or coefficient}}$
 $\xrightarrow{\text{intercept of } Y}$
 $\xrightarrow{\text{Independent variable}}$
 $\xrightarrow{\text{dependent variable}}$

for slope and Intercept we know there is

a formula,

$$m = \frac{\sum (x - \bar{x}) * (y - \bar{y})}{\sum (x - \bar{x})^2}$$

And $c = \bar{y} - m\bar{x}$

\bar{x} = mean of x

And \bar{y} = mean of y

$$\bar{x} = \frac{2+4+5+3+6+5+7}{7}$$

$$= \frac{32}{7} = 4.57$$

$$\bar{y} = \frac{35+60+20+50+50+55+60}{7}$$

$$= \frac{330}{7} = 47.14$$

$$\begin{aligned} ME &= (2-4.57)(35-47.14) + (4-4.57) \\ &\quad (60-47.14) + (5-4.57)(20-47.14) \\ &\quad + (3-4.57)(50-47.14) + (6-4.57) \\ &\quad (50-47.14) + (5-4.57)(55-47.14) \\ &\quad + (7-4.57)(60-47.14) \end{aligned}$$

$M1 \Rightarrow$

$$M2 = (2-4.57)^2 + (4-4.57)^2 + (5-4.57)^2 \\ + (3-4.57)^2 + (6-4.57)^2 + (5-4.57)^2 \\ + (7-4.57)^2$$

$$M = \frac{M1}{M2}$$

$$= 2.63$$

$$c = \bar{Y} - m\bar{x}$$

$$= 47.14 - 2.63 \times 4.57$$

$$= 35.14$$

$$Y_1 = (2.63 \times 2) + 35.16 \quad \boxed{y = (mx + c)}$$

$$= 40.42$$

$$Y_2 = (2.63 \times 4) + 35.16 = 45.68$$

$$Y_3 = (2.63 \times 5) + 35.16 = 48.31$$

$$Y_4 = (2.63 \times 3) + 35.16 = 43.05$$

$$Y_5 = (2.63 \times 6) + 35.16 = 50.94$$

$$Y_6 = (2.63 \times 5) + 35.16 = 48.31$$

$$Y_7 = (2.63 \times 7) + 35.16 = 53.57$$

weight	Price	predicted Price	residual
2	35	40.42	5.42
4	60	45.68	14.32
5	20	48.31	28.31
3	50	43.05	6.95
6	50	50.94	0.94
5	55	48.31	6.69
7	60	53.57	6.43