

3.

X	Y
3	17
5	23
7	41
9	50

$$\hat{y} = 5.85X - 2.35$$

so

$$\hat{y} = 5.85(21) - 2.35$$

$$\hat{y} = 120.5$$

predict y
when X = 21

4. ACTUAL DATA POINT

(3, 9)

↑

$$y = 9$$

$$\hat{y} = 3.1X - 0.05$$

$$\hat{y} = 3.1(3) - 0.05$$

$$\hat{y} = 9.25$$

$$\begin{aligned} \text{RESIDUAL} &= y - \hat{y} \\ &= 9 - 9.25 = -0.25 \end{aligned}$$

5.

X	Y
3	17
5	23
7	41
9	50

$$\hat{y} = 5.85X - 2.35$$

RESIDUALS

$$y - \hat{y}$$

$$(y - \hat{y})^2$$

3	17	$5.85(3) - 2.35 = 15.2$	$17 - 15.2 = 1.8$	$(1.8)^2 = 3.24$
5	23	$5.85(5) - 2.35 = 26.9$	$23 - 26.9 = -3.9$	$(-3.9)^2 = 15.21$
7	41	$5.85(7) - 2.35 = 38.6$	$41 - 38.6 = 2.4$	$(2.4)^2 = 5.76$
9	50	$5.85(9) - 2.35 = 50.3$	$50 - 50.3 = -0.3$	$(-0.3)^2 = 0.09$

$$\sum (y - \hat{y})^2 = 24.3$$