18MAT41 - Math [▷] Afnan Meeqquee

Super Imp [O] _afuu

Q1. Fit a best fitting curve in the form $y = ax^b$ for the following data:

X	1	2	3	4	5
Y	0.5	2	4.5	8	12.5

- Feb 2021

Video soln: Geometric Curve

Q2. Fit a best fitting parabola $Y = a + bx + cx^2$ for the following data:

X	-2	-1	0	1	2
Y	-3.15	-1.39	0.62	2.88	5.378

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Video soln: Parabola

Q3. If θ is the acute angle b/w the lines of regression, then show that $\tan\theta = \frac{\sigma_x \sigma_y}{\sigma_x^2 + \sigma_y^2}\left(\frac{1-r^2}{r}\right)$, Explain the significance of when $r = 0$ & $r = \pm 1$

- Model QP

Video soln: Regression Derivation (Imp)

Q4. Derive $r = \frac{\sigma_x^2 + \sigma_y^2 - \sigma_{x-y}^2}{2\sigma_x \sigma_y}$

Super imp

Video soln: Correlation Derivation (Imp)

Q5. Find the correlation coeff. b/w 'x' & 'y', obtain regression lines

- (20)

X	1	2	3	4	5	6	7	8	9	10
Y	10	12	16	28	25	36	41	49	40	50

Q6. Calculate Rank coefficient for the data --- Video: Rank Correlation

- (28)