

TUGAS PERTEMUAN 13
STATISTIKA DAN PROBABILITAS
SLIDE 31



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SOAL

Buatlah persamaan garis trend dengan metode tangan bebas dan metode rata-rata semi.
Ramalkan PDB untuk tahun 2002.

Tahun	X	PDB (Y)
1992	0	10164,9
1993	1	11169,2
1994	2	12054,6
1995	3	12325,4
1996	4	12842,2
1997	5	13511,5
1998	6	14180,8
1999	7	14850,1

JAWABAN

- **Metode Tangan Bebas**

$$Y = a + bX$$

$$(0, 10164,9) \quad 10164,9 = a + b(0)$$

$$(7, 14850,1) \quad 14850,1 = a + b(7)$$

$$a + b(0) = 10164,9$$

$$a = 10164,9$$

$$a + 7b = 14850,1$$

$$10164,9 + 7b = 14850,1$$

$$7b = 4685,2$$

$$b = 669,3$$

→

$$Y = a + bX$$

$$Y = 10164,9 + 669,3X$$

→

$$PDB_{2002} = 10164,9 + 669,3(10)$$

$$PDB_{2002} = 16857,9 \text{ (Rp 16.857,9 milyar)}$$

- **Metode Rata-rata Semi**

$$X_1 = \frac{1+2}{2} = 1,5$$

$$Y_1 = \frac{45714,1}{4} = 11428,5$$

$$(1,5; 11428,5)$$

→

$$X_2 = \frac{5+6}{2} = 5,5$$

$$Y_2 = \frac{55384,6}{4} = 13846,2$$

$$(5,5; 13846,2)$$

$$Y = a + bX$$

$$a + 1,5X = 11428,5 \leftrightarrow 5,5a + 8,25b = 62856,75$$

$$a + 5,5X = 13856,2 \leftrightarrow \underline{1,5a + 8,25b = 20769,3} -$$

$$4a = 42087,45$$

$$a = 10521,8625$$

$$b = 604,425$$

$$Y = 10521,8625 + 604,425X$$

$$PDB_{2002} (X = 10)$$

$$Y = 10521,8625 + 604,425 (10)$$

$$Y = 16566.1125$$