

Anni	Variabile Y
2002	99
2003	232
2004	345
2005	380
2006	410
2007	375
2008	320
2009	300
2010	205
totale	2666

**Adattamento**

**Calcolo con gli scarti**

x	x - M <sub>x</sub>	y <sub>i</sub>	$\bar{x}^2$	$\bar{x}^3$	$\bar{x}^4$	$\bar{x} * y$	$\bar{x}^2 * y$	(y-My) <sup>2</sup>	y <sup>2</sup>	f( $\bar{x}$ )	y-f( $\bar{x}$ )	(y-f( $\bar{x}$ )) <sup>2</sup>
1	-4,0	99	16	-64,00	256,00	-396	1584,00	38897	9801	115,4061	-16,41	269,159
2	-3,0	232	9	-27,00	81,00	-696	2088,00	4124,5	53824	231,9182	0,08	0,00669
3	-2,0	345	4	-8,00	16,00	-690	1380,00	2379,3	119025	317,8697	27,13	736,053
4	-1,0	380	1	-1,00	1,00	-380	380,00	7018,7	144400	373,2606	6,74	45,4194
5	0,0	410	0	0,00	0,00	0	0,00	12945	168100	398,0909	11,91	141,826
6	1,0	375	1	1,00	1,00	375	375,00	6205,9	140625	392,3606	-17,36	301,391
7	2,0	320	4	8,00	16,00	640	1280,00	565,38	102400	356,0697	-36,07	1301,02
8	3,0	300	9	27,00	81,00	900	2700,00	14,272	90000	289,2182	10,78	116,248
9	4,0	205	16	64,00	256,00	820	3280,00	8321,5	42025	191,8061	13,19	174,08
45	0	2666	60	0	708	573	13067	80472	870200	2666,0000	0,00	3085,21

**M<sub>x</sub> = 5**

**M<sub>y</sub> = 296,22**

**Var(y) = 8941,28**

$$\left\{ \begin{array}{l} \sum y = na_0 + a_2 \sum \bar{x}^2 \\ \sum \bar{x}y = a_1 \sum \bar{x}^2 \\ \sum \bar{x}^2 y = a_0 \sum \bar{x}^2 + a_2 \sum \bar{x}^4 \end{array} \right.$$

**Sistema Ridotto**

$$\left\{ \begin{array}{rclcl} 2666 & = & 9 a_0 & + & 60 a_2 \\ 573 & = & & 60 a_1 & \\ 13067 & = & 60 a_0 & + & 708 a_2 \end{array} \right.$$

**a<sub>1</sub> = 9,55**

**D<sub>0</sub> = 2772**

**D<sub>1</sub> = 1103508**

**a<sub>0</sub> = D<sub>1</sub>/D<sub>0</sub> = 398,09**

**D<sub>2</sub> = -42357**

**a<sub>3</sub> = D<sub>2</sub>/D<sub>0</sub> = -15,28**

**f(x) = 398,091 + 9,55 x + -15,2803 x<sup>2</sup>**

$$\eta = \sqrt{\sum_{i=1}^n [(y_i - f(x_i))]^2 / n}$$

$$= \sqrt{3085,21 / 9} = 18,51488$$

**η<sup>2</sup> = 342,8007**

$$R^2 = 1 - \frac{\eta^2}{\sigma_y^2}$$

$$R^2 = 1 - \frac{3428007}{89413} = 0,9617$$