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Parcial Final

1-8-12

1.

240 veces

¿ $B(n=3, p=0,25)$?

X	0	1	2	3
O_i	24	108	95	23

$P(x=0) = \binom{3}{0}\left(\frac{1}{4}\right)^0\left(1-\frac{1}{4}\right)^3 = 42,57\%$

$P(x=1) = \binom{3}{1}\left(\frac{1}{4}\right)^1\left(1-\frac{1}{4}\right)^2 = 42,19\%$

$P(x=2) = \binom{3}{2}\left(\frac{1}{4}\right)^2\left(1-\frac{1}{4}\right)^1 = 14,06\%$

Y	0	1	2	3
O_i	24	108	95	23
e_i	101	101	34	4

$\chi^2 = 26,3634$

R/ Si es una distribucion Binomial

8.

Año (x)	1989	1990	1991	1992	1993	1994	1995
Valor (y)	660,0	671,4	688,0	695,5	717,1	759,2	807,0

S_{xx}? R^2?

$S_{xx} = \sum x_k^2 - \frac{1}{n}\left(\sum x_k\right)^2$

$S_{xx} = \left(1989^2 + 1990^2 + \ldots + 1995^2\right) - \frac{1}{7}\left(1989 + 1990 + \ldots + 1995\right)^2$

$S_{xx} = 27\,776\,476 - 27\,776\,448$

$\boxed{S_{xx} = 28}$

$S_{xy} = 9\,957\,060,1 - 9\,956\,414,4$

$= 645,7$

$S_{yy} = 3\,585\,308,26 - 3\,568\,857,606$

$= 16\,450,654$

$R^2 = \frac{S_{xy}^2}{S_{xx} \cdot S_{yy}}$

$= \frac{645,7^2}{28 \cdot 16\,450,654}$

$\boxed{R^2 = 0,905}$

12.

$\frac{1}{1000}$ mal diligenciados

¿6, 7 u 8 dedos mal de tamaño 10 000?

$P\left(\frac{6}{10\,000}\middle|\frac{1}{1000}\right) + P\left(\frac{7}{10\,000}\middle|\frac{1}{1000}\right) + P\left(\frac{8}{10\,000}\middle|\frac{1}{1000}\right)$