

Ejercicio 1

Persona	Consumo Prot	Masa Muscular
1	80	60
2	100	65
3	90	62
4	85	61
5	110	67
6	95	63

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

$$\bar{x} = \frac{80 + 100 + 90 + 85 + 110 + 95}{6} = 93.33$$

$$\bar{y} = \frac{60 + 65 + 62 + 61 + 67 + 63}{6} = 63$$

X	Y	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$	$(x_i - \bar{x})^2$	$(y_i - \bar{y})^2$
80	60	-13.33	-3	39.99	177.68	9
100	65	6.67	2	13.34	44.48	4
90	62	3.33	-1	-3.33	11.08	1
85	61	-8.33	-2	16.66	69.38	4
110	67	16.67	4	66.68	277.88	16
95	63	1.67	0	-0	2.78	0
				$\Sigma = 140$	$\Sigma = 583.28$	$\Sigma = 34$

$$= \frac{583.28 \times 34}{19,831.52}$$

$$= \sqrt{19,831.52}$$

$$\downarrow$$

$$140.82$$

$$0.994176933$$

$$99.41769635$$

$$\frac{140}{140.82}$$

$$140.82$$

Casi Perfecto.

2..

Personas	Consumo de agua (L)	Pérdida en peso
1	2.0	0.5
2	2.5	0.7
3	1.8	0.4
4	3.0	0.9
5	2.2	0.6
6	2.7	0.8

②

$$D_i = x_i - y_i - (x_i - \bar{x}) - (y_i - \bar{y}) - (x_i - y_i)^2 - (y_i - \bar{y})^2 - (x_i - \bar{x})(y_i - \bar{y})$$

1	2.0	0.5	0.367	-0.15	-0.09	-0.0225	-0.04
2	2.5	0.7	0.2	-0.05	-0.04	-0.0025	-0.01
3	1.8	0.4	0.5	-0.25	-0.25	-0.0625	-0.125
4	3.0	0.9	0.7	-0.25	-0.49	-0.0025	-0.175
5	2.2	0.6	0.7	-0.05	-0.01	-0.0025	-0.005
6	2.7	0.8	0.4	-0.15	-0.16	-0.0225	-0.06
6	14.2	$\Sigma=39$	$\Sigma=0.4$	$\Sigma=0$	$\Sigma=1.64$	$\Sigma=0.175$	$\Sigma=0.42$

③

$$(x_i - \bar{x})^2 (y_i - \bar{y})^2 = \frac{1.04 \times 0.175}{0.182} = 0.187$$

$$R = \frac{0.42}{0.42661458} = 0.934495185 \times 160 = 98.41951853$$

$$\textcircled{1} \Sigma = (x_i - \bar{x}) \Sigma (y_i - \bar{y})$$

$$\bar{x} = \frac{2 + 2.5 + 1.8 + 3.0 + 2.2 + 2.5}{14.2 - 6} = 2.3$$

$$\bar{y} = \frac{.5 + .7 + .4 + .9 + .6 + .8}{3.9 \div 6} = 0.65$$

$$\bar{y} = 2.3 \quad \bar{y} = 0.65$$

(3)

Genero

- Masculino
- Femenino

Vegetales	Proteinas	Carbohidratos
12	18	10
15	12	13

M → 12 + 18 + 10 = 40 (Total)

F → 15 + 12 + 13 = 40
23 30 23 80

13.3	15	11.5	39.8
13.3	15	11.5	39.8
26.6	30	23	79.6

$k = (3-1)(2-1) = 2 \times 2 = 4$

→ Frecuencia Esperada

$f_e = \frac{(\text{total de fila}) (\text{total de columna})}{\text{total de la muestra}}$

$f_e = \frac{40(27)}{80} = \frac{1080}{80} = 13.5$

t = 5.46

$f_e = \frac{40(30)}{80} = \frac{1200}{80} = 15$

$f_e = \frac{40(23)}{80} = \frac{920}{80} = 11.5$

Ejercicio 4

Actividad Física	Baja Frecuencia	Mediana Frecuencia	Alta Frecuencia
Sedentario	20	15	5
Moderado	10	25	15
Activo	5	20	25

	f _T	f _{Mel}	f _A	T
Sed	20	15	5	40
Mod	10	25	15	50
Act	5	20	25	50
Total	35	60	45	140

	Total			
	10	17.14	12.857	39.997
	12.5	21.42	16.07	49.99
	12.5	21.42	16.07	49.99
Total	35	59.98	44.997	139.977

$$= (3-1)(3-1) = 4 \times 27.7\%$$

La actividad física es independiente

$$f_c = \frac{40(35)}{140} = 10$$

$$f = \frac{50(25)}{140} = 12.5$$

$$f_c = \frac{40(60)}{140} = 17.14$$

$$f = \frac{50(60)}{140} = 21.42$$

$$f_c = \frac{40(45)}{140} = 12.857$$

$$f = \frac{50(45)}{140} = 16.07$$

Ejercicio 6

$$y = B_0 + B_1x$$

$$B_1 = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum (x_i - \bar{x})^2}$$

$$B_0 = \bar{y} - B_1\bar{x}$$
$$B_1 = 0.24 \quad B_0 = 40.61$$

$$63 - 0.24$$
$$(93.33)$$

$$63 - 22 - 39$$
$$B_0 = 40.01$$

$$B_0 = 63 - 24$$
$$B_0 = 62.76$$

$$40.61 + 0.24(80) = 59.81$$

$$40.61 + 0.24(100) = 64.61$$

$$y = 40.61 + 0.24x$$