



**Nombre de alumno: Pablo Ángel
Campo Santis**

**Nombre del profesor: Jorge Enrique
Albores Aguilar**

Nombre del trabajo: Actividad 2

Materia: Estadística

PASIÓN POR EDUCAR

Grado: 1er cuatrimestre

Grupo: A

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10-oct-21

40	56	45	66	50	50
55	60	55	67	49	59
60	63	54	50	55	58
63	50	50	46	48	60
47	50	65	49	40	64
40	49	62	58	44	72
55	50	78	65	50	70
50	54	84	62	45	68

40	40	40	44	45	45
46	47	48	49	49	49
50	50	50	50	50	50
50	50	50	54	54	55
55	55	55	56	56	58
58	59	60	60	60	62
62	63	63	64	65	65
67	68	70	72	78	84

* Media:

$$40 + 40 + 40 + 44 + 45 + 45 + 46 + 47 + 48 + 49 + 49 + 49 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 54 + 54 + 55 + 55 + 56 + 56 + 58 + 58 + 59 + 60 + 60 + 60 + 62 + 62 + 63 + 63 + 64 + 65 + 65 + 67 + 68 + 70 + 72 + 78 + 84 = 2670 = 2670 \div 48 = 55.625$$

* Mediana:

$$55, 55 \rightarrow 55 + 55 = 110 = 110 \div 2 = 55$$

* Moda:

"50", este es el valor que más se repite, encontrándose 9 veces

* Varianza: (formula de población)

$$\sigma^2 = \frac{\sum (x - \bar{x})^2}{n} = \bar{x} = \frac{\sum x}{n} = \bar{x} = \frac{2670}{48} = 55.625 = \text{promedio}$$

$$\sigma^2 = (40 - 55.625)^2 + (40 - 55.625)^2 + (40 - 55.625)^2 + (44 - 55.625)^2 + (45 - 55.625)^2 + (45 - 55.625)^2 + (46 - 55.625)^2 + (47 - 55.625)^2 + (48 - 55.625)^2 + (49 - 55.625)^2 + (49 - 55.625)^2 + (49 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (50 - 55.625)^2 + (54 - 55.625)^2 + (54 - 55.625)^2 + (55 - 55.625)^2 +$$



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$$\begin{aligned} & (55 - 55.625)^2 + (55 - 55.625)^2 + (55 - 55.625)^2 + (56 - 55.625)^2 \\ & + (56 - 55.625)^2 + (58 - 55.625)^2 + (58 - 55.625)^2 + (59 - 55.625)^2 \\ & + (60 - 55.625)^2 + (60 - 55.625)^2 + (60 - 55.625)^2 + (62 - 55.625)^2 \\ & + (62 - 55.625)^2 + (63 - 55.625)^2 + (63 - 55.625)^2 + (64 - 55.625)^2 \\ & + (65 - 55.625)^2 + (65 - 55.625)^2 + (67 - 55.625)^2 + (68 - 55.625)^2 \\ & + (70 - 55.625)^2 + (72 - 55.625)^2 + (78 - 55.625)^2 + (84 - 55.625)^2 \end{aligned}$$

$$\sigma^2 = \frac{\quad}{48}$$

$$\begin{aligned} \sigma^2 = & 244.14 + 244.14 + 244.14 + 135.14 + 117.89 + 112.89 + \\ & 92.64 + 74.39 + 58.14 + 43.89 + 43.89 + 43.89 + 31.64 + \\ & 31.64 + 31.64 + 31.64 + 31.64 + 31.64 + 31.64 + \\ & 31.64 + 2.64 + 2.64 + 0.39 + 0.39 + 0.39 + 0.39 + 0.14 + \\ & 0.14 + 5.64 + 5.64 + 11.39 + 19.14 + 19.14 + 19.14 + 40.64 \\ & + 40.64 + 54.39 + 54.39 + 70.14 + 87.89 + 87.89 + 129.39 \\ & + 153.14 + 206.64 + 268.14 + 500.64 + 805.14 \end{aligned}$$

48

$$\sigma^2 = 4,321.22 \div 48 = 90.02$$

$$\sigma^2 = 90.02$$

* Desviación estándar:

$$\sigma^2 = 90.02$$

$$\sigma = \sqrt{90.02}$$

$$\sigma = 9.487$$

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27	40	44	35	34	57	35	38
35	87	35	44	44	55	87	45
40	35	60	78	35	78	35	56
28	44	66	76	55	54	88	67
35	35	76	89	80	86	44	77
44	40	82	35	60	44	35	78
56	85	35	70	77	90	80	35

27	34	35	35	35	35	35	35
35	35	35	35	35	35	35	38
40	40	40	44	44	44	44	44
44	45	54	55	55	56	56	57
60	66	67	68	70	76	76	77
77	78	78	78	78	80	80	82
85	86	87	87	88	89	90	94

* Media:

$$27 + 34 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 35 + 38 + 40 + 40 + 40 + 44 + 44 + 44 + 44 + 44 + 44 + 45 + 54 + 55 + 55 + 56 + 56 + 57 + 60 + 66 + 67 + 68 + 70 + 76 + 76 + 77 + 77 + 78 + 78 + 78 + 78 + 80 + 80 + 82 + 85 + 86 + 87 + 87 + 88 + 89 + 90 + 94 = 3213 = 3213 \div 56$$

$$\bar{x} = 57.375$$

* Mediana:

$$55, 55 \rightarrow 55 + 55 = 110 = 110 \div 2 = 55$$

$$Me = 55$$

* Moda:

$Mo = 35$ este es el valor que mas se repite, repitiendose en total de 13 veces

* Variancia: (formula de muestra)

$$s^2 = \frac{\sum (x - \bar{x})^2}{n-1} = s^2 = \frac{\sum x}{n-1} = \bar{x} = \frac{3213}{56} = 57.375 \text{ promedio}$$

$$s^2 = (27 - 57.375)^2 + (34 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (35 - 57.375)^2 + (38 - 57.375)^2 + (40 - 57.375)^2 + (40 - 57.375)^2 + (40 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (45 - 57.375)^2 + (54 - 57.375)^2 + (55 - 57.375)^2 + (55 - 57.375)^2 + (56 - 57.375)^2 + (56 - 57.375)^2 + (57 - 57.375)^2 + (60 - 57.375)^2 + (66 - 57.375)^2 + (67 - 57.375)^2 + (68 - 57.375)^2 + (70 - 57.375)^2 + (76 - 57.375)^2 + (76 - 57.375)^2 + (77 - 57.375)^2 + (77 - 57.375)^2 + (78 - 57.375)^2 + (78 - 57.375)^2 + (78 - 57.375)^2 + (78 - 57.375)^2 + (80 - 57.375)^2 + (80 - 57.375)^2 + (82 - 57.375)^2 + (85 - 57.375)^2 + (86 - 57.375)^2 + (87 - 57.375)^2 + (87 - 57.375)^2 + (88 - 57.375)^2 + (89 - 57.375)^2 + (90 - 57.375)^2 + (94 - 57.375)^2$$

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$$\begin{aligned} & (40 - 57.375)^2 + (40 - 57.375)^2 + (40 - 57.375)^2 + (44 - 57.375)^2 + \\ & (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + (44 - 57.375)^2 + \\ & (44 - 57.375)^2 + (45 - 57.375)^2 + (54 - 57.375)^2 + (55 - 57.375)^2 \\ & + (56 - 57.375)^2 + (56 - 57.375)^2 + (57 - 57.375)^2 + (60 - 57.375)^2 + \\ & (66 - 57.375)^2 + (67 - 57.375)^2 + (68 - 57.375)^2 + (70 - 57.375)^2 + \\ & (76 - 57.375)^2 + (76 - 57.375)^2 + (77 - 57.375)^2 + (77 - 57.375)^2 + \\ & (78 - 57.375)^2 + (78 - 57.375)^2 + (78 - 57.375)^2 + (78 - 57.375)^2 + \\ & (80 - 57.375)^2 + (80 - 57.375)^2 + (82 - 57.375)^2 + (82 - 57.375)^2 + \\ & (85 - 57.375)^2 + (86 - 57.375)^2 + (87 - 57.375)^2 + (87 - 57.375)^2 + \\ & \underline{(88 - 57.375)^2 + (89 - 57.375)^2 + (90 - 57.375)^2 + (94 - 57.375)^2} \end{aligned}$$

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$$\begin{aligned} S^2 = & 912.33 + 346.39 + 500.64 + 500.64 + 500.64 + 500.64 + 500.64 \\ & + 500.64 + 500.64 + 500.64 + 500.64 + 500.64 + 500.64 + 500.64 + \\ & 500.64 + 375.39 + 301.89 + 301.89 + 301.89 + 178.89 + \\ & 178.89 + 178.89 + 178.89 + 178.89 + 153.14 + 11.39 + \\ & 5.64 + 5.64 + 1.89 + 1.89 + 0.14 + 6.89 + 74.39 + 92.64 \\ & + 112.89 + 159.39 + 346.89 + 346.89 + 385.14 + 385.14 + \\ & 425.39 + 425.39 + 425.39 + 425.39 + 511.89 + 511.89 + \\ & 606.39 + 763.14 + 819.39 + 877.64 + 937.89 + 1,000.14 + \\ & 1064.39 = 21,215.69 \end{aligned}$$

$$S^2 = \frac{21,215.69}{55} = 385.73 = S^2 = 385.73$$

* Desviación estandar:

$$\sqrt{385.73} = 19.64$$