Arcos Serrano Víctor Ghalies 23/II/2012 Sección A
6IM7 Act. 1. 2

P1. $\bar{x} = 21$; $G = \sqrt{437}$; $a, b \in \mathbb{R} \,/\, b > a$

$\frac{a+b}{2} = 21$, $\sqrt{ab} = \sqrt{437}$

$a = 42 - b$, $ab = 437$

$(42-b)(b) = 437 \Rightarrow b^2 - 42b + 437 = 0$

$(b-19)(b-23) = 0$

$b_1 = 19$; $b_2 = 23$

$b = 23$

P2. $\frac{x+21}{n+1} = \frac{x}{n} + 2$; $\frac{x+3}{n+1} = \frac{x}{n} - 1$

① $n(x+21) = (n+1)(x+2n)$, $n(x+3) = (n+1)(x-n)$ ②

① − ②

$n(x+21-x-3) = (n+1)(x+2n-x+n)$

$18n = 3n^2 + 3n$

$5n = n^2$

$5 = n$

$n = 5$

P3. $\bar{x}_1 = 75$; $n = 1$; $\bar{x}_2 = 85$: $n = 2$; $\bar{x}_3 = 70$: $n = 3$;

$\bar{x}_4 = 60$: $n = 4$; $\bar{x}_5 = 55$: $n = 5$

$a + b + c + d + e \rightarrow \Sigma$ califs.

$\bar{x}_1 = \frac{a}{1}$

$\bar{x}_2 = \frac{a+b}{2}$

$\bar{x}_3 = \frac{a+b+c}{3}$

$\bar{x}_4 = \frac{a+b+c+d}{4}$

$\bar{x}_5 = \frac{a+b+c+d+e}{5}$

$\bar{x}_5 = \frac{4\bar{x}_4 + e}{5}$

$\bar{x}_5 = 55 = \frac{4(60)+e}{5}$

$55(5) = 4(60) + e$

$e = 35$

Última calificación = 35

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61M7

23/II/2022 Sección A
Act. 1.2

P4.

x	f	fx
5	1	5
6	2	12
7	4	28
8	7	56
9	4	36
10	2	20
Σ	20	157

$\frac{\Sigma(f \cdot x)}{20} = \bar{x}$; $n = 20$

$5 \cdot 1 + 6 \cdot 2 + 7 \cdot 4 + 8 \cdot 7 + 9 \cdot 4 + 10 \cdot 2 = 157$

$\therefore \frac{157}{20} = 7.85$

$\bar{x} = 7.85$

P5.

x	f	fx	fx^2
5	1	5	25
6	2	12	72
7	4	28	196
8	7	56	448
9	4	36	324
10	2	20	200
	20	157	1265

$n = 20 \Rightarrow n < 31 \Rightarrow s^2$

$\bar{x} = \frac{157}{20} = 7.85$

$s^2 = \frac{\Sigma(f \cdot x^2)}{n+1} - \frac{\Sigma^2(f \cdot x)}{n^2 - n}$

$s^2 = \frac{1265}{19} - \frac{157^2}{20^2 - 20}$

$s^2 = \frac{651}{380} = 1.7132$

$s^2 = \frac{651}{380}$

P6.

	# Clase	int. d/clase	f	x_i	f/x_i	LRI − LRS	F	f·x
	1	1.0 − 3.0	1	2	1/2	0.95 − 3.05	1	2
	2	3.1 − 5.1	3	4.1	30/41	3.05 − 5.15	4	12.3
	3	5.2 − 7.2	6	6.2	30/31	5.15 − 7.25	10	37.2
Mo Md	4	7.3 − 9.3	(25)	8.3	250/83	7.25 − 9.35	35	207.5
	5	9.4 − 11.4	17	10.4	85/52	9.35 − 11.45	52	176.8
P_{95}	6	11.5 − 13.5	8	12.5	16/25	11.45 − 13.55	60	100
	Σ		60	43.5	7.4861			535.8

0.9

$H = n\Sigma^{-1}(f/x_i)$

$= 60(7.4861)^{-1}$

$= 8.0149$

Md: $Md_{pos} = \frac{60+1}{2} = 30.5 \rightarrow {}^{30}_{31}$

$Md = 7.25 + \left[\frac{30-10}{29}\right](2.1) = 8.93$

Mo: $7.25 + \left[\frac{25-6}{2(25)-6-17}\right](2.1) = 8.7278$

P_{95}: $P_{95\,pos} = \frac{60(95)}{100} = 57 \Rightarrow P_{95} = 11.45 + \left[\frac{57-52}{8}\right](2.1) = 12.7625$

$n > 30 \Rightarrow \sigma^2 = \frac{\Sigma x_i^2}{n} - \bar{x}^2 = \frac{5096.09}{60} - (8.93)^2 = 5.1891$

a) $H = 8.0149$; b) $Md = 8.93$; c) $Mo = 8.7278$; d) 12.7625; e) 5.1891