

$$1-a) \text{ Evento } \{2, 4, 6\} = 3 \quad \frac{3}{6} = \frac{1}{2} = 0,5 \cdot 100 = 50\%$$

$$b) \frac{12^4}{52^4} = \frac{3}{13} \approx 0,2308 \cdot 100 \approx 23,08\%$$

$$2-a) \text{ Evento } \{5, 10, 15, 20, 25, 30, 35, 40, 45, 50\} = 10$$

$$\frac{10}{50} = \frac{1}{5} = 0,2 \cdot 100 = 20\%$$

$$b) \text{ Evento } \{3, 13, 23, 33, 43\} = \frac{5^5}{50^5} = \frac{1}{10} = 0,1 \cdot 100 = 10\%$$

$$3-a) \text{ Eventos } = \{1, 13, 23, 33, 43\} = 3 \quad \frac{3}{64} \cdot 100 = 4,6875\%$$

$$b) \text{ Eventos } = \{5, 15, 25, 35, 45\} = \frac{4}{36} \cdot 100 = 11,11\%$$

$$c) \text{ Eventos } = \{2, 13, 23, 33, 43, 53\}$$

$$\{3, 23, 33, 43, 53\}$$

$$\{4, 33, 43, 53\}$$

$$\{5, 43, 53\}$$

$$\{6, 53\}$$

$$\frac{1}{36} \cdot 15 = \frac{15}{36} \approx 0,417 \cdot 100 \approx 41,7\%$$

d) Cuenta =  $\{1, 18, 11, 23, 11, 38, 11, 48\}$   
 $\{2, 18, 13, 18, 14, 18\}$   
 $\{2, 23, 12, 38\}$   
 $\{3, 23\}$

$$\frac{1}{36} \cdot 10 = \frac{10}{36} = 27,8\%$$

$$4) \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4} = 0,25 \cdot 100 = 25\%$$

5-a) Cuenta =  $\{3, 5, 4, 9, 11\} = 5$   $\frac{5}{9} \cdot 100 = 55,55\%$

b)  $C = \{3, 9\} = 2$   $\frac{2}{9} \cdot 100 = 22,22\%$

$$6 - \frac{4}{52} \cdot \frac{4}{51} = \frac{204 + 208}{2652} = \frac{412}{2652} \cdot 100 \approx 15,53\%$$

$$7 - \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8} \cdot 100 = 12,5\%$$

8 - $f_i$	$x_i$	$f_i \cdot x_i$	
50	50	22500	$\bar{x} = 118000$
20	70	38500	200
40	60	26000	$\bar{x} = 590$
30	40	22500	
10	80	8500	
$\leq 200$		$\leq 118000$	

$$\frac{100}{2} = 50 \quad Md = 500 + \frac{100 - 50}{70} \cdot 100 \approx 571,43$$

data / /  
5 1 2 3 4 5 6

9-a)  $P_8 = \frac{8 \cdot 100}{10} = 80$

~~14~~  
12  
26  
46 -  $P_8 = 179,5 + \left[ \frac{80 - 72}{18} \right] \cdot 10$   
72  
90 -  
100 -

$P_8 = 183,94$

b)  $\frac{27 \cdot 100}{100} = 27$   $P_{27} = 159,5 + \left[ \frac{27 - 26}{20} \right] \cdot 10$   
 $P_{27} = 160$

c)  $\frac{3 \cdot 100}{4} = 75$   $P_3 = 179,5 + \left[ \frac{75 - 72}{18} \right] \cdot 10$   
 $P_3 = 183,16$

$10 - \sum f_i = \frac{9,69}{2} = 4,845$

f<sub>ac</sub>  
0,9  
2,2  
3,05  
4,1  
5,08 - 5  
6,43  
7,55  
8,94  
9,69

R: A mediana das alturas é 0,98 m



11-  $\sum f_i = \frac{530}{2} = 265$

R. L mediana foi em agosto //

- 100
- 25
- 45
- 75
- 110
- 160
- 200
- 245
- 280-8
- 310
- 395
- 465
- 530

12-  $\frac{20 + 30 + 35 + 40}{4} = \bar{x} = 31,25 //$

13- Candidato

- A
- B
- C
- E
- D

} Ordem de classificação //

14-  $\frac{h}{35} = 1,65$        $\frac{h}{20} = 3,40$   
 $h = 1,65 \cdot 35$        $h = 3,40 \cdot 20$   
 $h = 57,75$        $h = 68$

$\frac{23,45}{35} = \bar{x}$

$\bar{x} = 1,58m //$

15-  $11,40 - 3x$  R: O tamanho da pipa mais men-  
 $17,50 - 5x$  dida foi a pipa com preço  
 $20,30 - 4x$  de 17,50

16-  $A = \bar{x} = \frac{17+18+20+13+20}{5} = 17,8$   
 $-0,8+0,2+3,2-4,8+2,2=0$

$B = \bar{x} = \frac{22+12+19+23+11}{5} = 17,4$   
 $4,6-5,4+1,6+5,6-6,4=0$

R: O candidato com a melhor média foi o candidato A, com  $\bar{x} = 17,8$  (ambos com desvio padrão igual).

17-  $5,5 = 25$   $\frac{3}{25} \cdot 100 = 12\%$

18-  $\text{carce} = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8} = 0,125 \cdot 100 = 12,5\%$

19- Tem uma assimetria negativa, pois sabemos que  $\bar{x} < Md$ , logo é negativo...

$\sum f_i = 184$   $\bar{x} = \frac{196}{184}$   
 $\bar{x} = 1,065$   
 $Md = 3$

16- CA =  $\bar{x} = 3$

$S^2 = 980 - \frac{(268)^2}{89}$

X	$f_i$	$h_i$	$h_i^2$	$f_i h_i^2$
1	17	17	3	51
2	18	36	4	72
3	21	63	9	189
4	13	52	16	202
5	20	100	25	500
$\Sigma$	89	268		980

$S^2 = 980 - 807,011$

$S^2 = 172,98876$

$S^2 = 1,96578$

$S = 1,40206$

CB =  $\bar{x} = 2,87$

X	$X_i^2$	$f_i$	$f_i X_i$	$f_i X_i^2$
1	1	22	22	22
2	4	12	24	48
3	9	19	57	171
4	16	23	92	368
5	25	11	55	275
$\Sigma$		87	250	884

$S^2 = 884 - \frac{(250)^2}{87}$

$S^2 = 1,9256$

$S = 1,3876$

R: Candidata A tem uma média / desvio padrão maior.



$$20 - CA = \frac{935 - 814}{2(1012 - 772)} = CA \approx 0,252$$

↳ curva leptocúrtica

$$CB = \frac{80,3 - 63,7}{2(86,6 - 55)} = CB \approx 0,263$$

↳ curva mesocúrtica

$$Cc = \frac{45,6 - 28,8}{2(49,8 - 20,5)} = Cc \approx 0,287$$

↳ curva platocúrtica

22- Candidato Votos

$x_i$	$x_i^2$	$f_i$	$f_i x_i$	$f_i x_i^2$
1	1	12	12	12
2	4	15	30	60
3	9	12	36	108
4	16	16	64	256
5	25	14	70	350
6	36	15	90	540
$\Sigma$		84	302	1326

$$s^2 = 1326 - \frac{(302)^2}{84}$$

$$s^2 = 1326 - 1085.76/83$$

$$s^2 = 240.23$$

$$s = \sqrt{289.44}$$

$$s = 17.013$$

Candidato Fpula:

$x_i$	$x_i^2$	$f_i$	$f_i x_i$	$f_i x_i^2$
1	1	12	12	12
2	4	11	22	44
3	9	18	54	162
4	16	9	36	144
5	25	19	95	475
6	36	15	90	540
$\Sigma$		84	309	1377

$$s^2 = 1377 - \frac{(309)^2}{84}$$

$$s^2 = 1377 - 1136.678$$

$$s = \sqrt{289.32}$$

$$s = 17.019$$

23- Wci

$x_i$	$f_i$	$f_i x_i$	$f_i x_i^2$	$x_i^2$
2	2	4	8	4
6	6	36	216	36
10	8	80	800	100
14	3	42	588	196
18	1	18	324	324
$\Sigma$	20	180	1936	660

$$s^2 = 1936 - \frac{(180)^2}{20}$$

$$s^2 = 1936 - 1620$$

$$s = \sqrt{316}$$

$$s = 17.78$$

$$CV = \frac{17.78}{9} \cdot 100 = 19.7\%$$

$$\bar{x} = \frac{180}{20} = 9$$