

SOLUÇÕES DOS EXERCÍCIOS PROPOSTOS

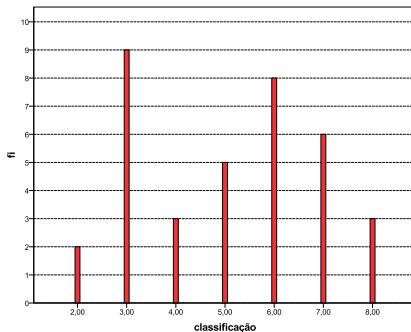
FICHA N°1 - DESCRIPTIVA

1.

a) Variável discreta ordinal

b) $\bar{x} = 5.056 ; s = 1.8197 ;$

Mediana=5.0; moda =3



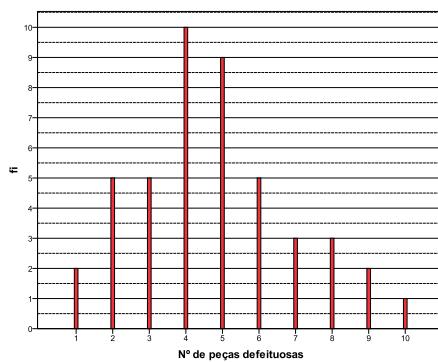
2.

a) Variável discreta

c) $\bar{x} = 4.78 \quad s^2 = 4.677$

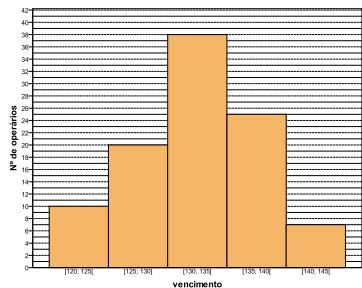
Mediana=5.0; moda =4

b)



3.

a)



b)

$\bar{x} = 132.45 \quad s = 5.34$
Mediana=132.6; moda
=132.9

c)(i) 68 (ii) 95

4.

a)

xi	fi	fri (%)	Fri (%)
422	2	2	2
427	5	5	7
432	6	6	13
437	14	14	27
442	18	18	45
447	27	27	72
452	19	19	91
457	8	8	99
462	1	1	100
Total	100	100	

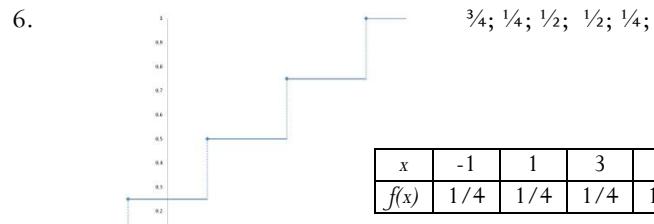
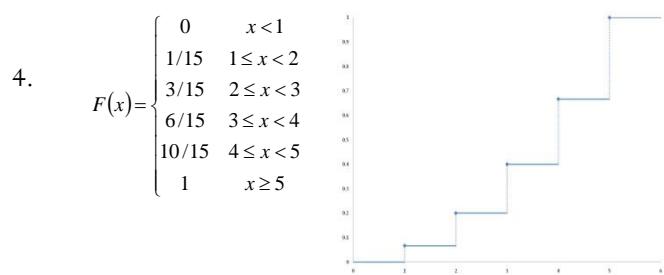
b) $\bar{x} = 444.2 , \quad s = 8.5$

c) 28%

5. a) $\bar{x} = 831.2 , \text{ Med}=830.59, \text{ Mod}=830, \quad s^2 = 647.85$

b) 32% c) 86%

FICHA N° 2 - DISTRIBUIÇÕES DE PROBABILIDADE



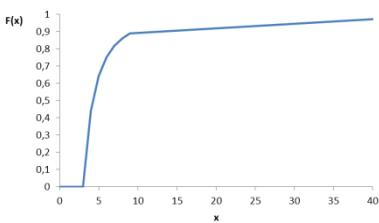
9. a) 0.54; 0.1519 b) $F(x) = \begin{cases} 0 & se \quad x \leq 2 \\ \frac{x^2}{16} + \frac{x}{8} - \frac{1}{2} & se \quad 2 < x < 4 \\ 1 & se \quad x \geq 4 \end{cases}$

10. a) 1/4 b) 1/4; 1/2 c) $F(x) = \begin{cases} 0 & se \quad x \leq 0 \\ \frac{1}{2}\sqrt{x} & se \quad 0 < x < 4 \\ 1 & se \quad x \geq 4 \end{cases}$

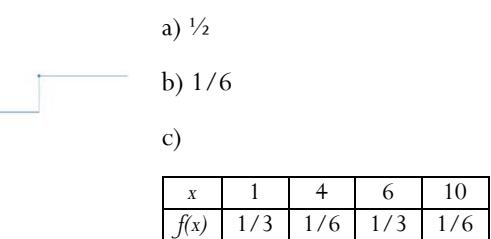
11. k = 2

12. a) k=6 b) 0,15625; 0.5 c) $F(x) = \begin{cases} 0 & se \quad x \leq 0 \\ 6\left(\frac{x^2}{2} - \frac{x^3}{3}\right) & se \quad 0 < x < 1 \\ 1 & se \quad x \geq 1 \end{cases}$

13. 1/2; 0; $f(x) = \begin{cases} 1/2 & -1 < x < 1 \\ 0 & outros valores \end{cases}$

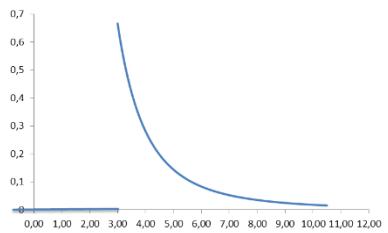


14. 0.64 e 0.859 $f(x) = \begin{cases} \frac{18}{x^3}, & x > 3 \\ 0, & x \leq 3 \end{cases}$



7. a) 1/15 b) $2/k(k+1)(2k+1)$

8. a) 1/2 b) 4/5
c) $F(x) = \begin{cases} 0 & se \quad x \leq 2 \\ \frac{1}{5}(x-2) & se \quad 2 < x < 7 \\ 1 & se \quad x \geq 7 \end{cases}$



FICHA N° 3 – ESPERANÇA MATEMÁTICA

1. 1/7; 1.837
2. 3.08; 0.347
3. 1; 1/6
4. a) 3.67; 15; 1.531 b) 183.04
5. a) 1.8205; 3.641; 7.889; 0.327 b) 10.7095

FICHA N° 4 – FAMÍLIAS DE DISTRIBUIÇÕES

1. a) 0.1901 b) 0.0113 c) 0.3917
2. a) 0.2463 b) 0.8593 c) 3.2
3. a) 0.0198 b) 0.9510 c) 2 d) 1.407
4. a) 0.9 b) 0.99 c) 0.999
5. a) 0.7625 b) 0.8867 c) 0.6492
6. a) 0.0821 b) 0.0653 c) 0.384
7. a) 0 b) 0.997 c) 0.0821 d) 0.9179
8. a) 0.034 b) 5
9. a) 0.2231 b) 0.066 c) 0.2525
10. a) 3.6 b) 0.874 c) 0.2125
11. a) 0.1667 b) 0.67

12. 20%
 13. a) 0.3297 b) 0.2387
 14. a) 0.6065 b) 0.5276
 15. a) 0.181 b) 0.2231
 16. a) 0.1056 b) 0.3372 c) 0.7492
 17. a) 0.0918 b) 27 meses
 18. a) 0.1056 b) 11.632 min. c) 11:15
 19. a) 0.0668 b) 0.0062 c) 0.9198
 20. a) 0.1056 b) 0.0062 c) 0.5934
 21. a) 8.8%, 40.82%, 40.82%, 8.8%, 0.38% b) 11 pares
 22. 0.0104
 23. a) 0.0386 b) 0.0823 c) 0.8731
 24. a) 0.0786 b) 0.1423

FICHA N° 5 – ESTIMADORES PONTUAIS

1. $t_r(\theta^2) = 0$
 2. a) W_1, W_3 b) $\text{var}[W_1] = \frac{3}{8}\sigma^2$, $\text{var}[W_3] = 0.34\sigma^2$ c) $ef(W_1, W_3) = 1.103$
 3. T_1
 4. a) Sim b) $n_1 > \frac{3}{4}n$
 5. a) $\frac{\theta+1}{3}$ b) Não

FICHA N° 6 - DISTRIBUIÇÕES AMOSTRAIS

1. a) 325 b) 2 c) 0.0606 d) 0.8186 e) 0.1587 f) 0.0668
 2. a) 0.0132 b) 0.1335 c) 0.6648
 3. 0.0244
 4. a) 0.8258 b) 0.8315
 5. a) 4 b) 0.0456

FICHA N° 7 - INTERVALOS DE CONFIANÇA

1. a) 64.3 ± 6.57 b) 64.3 ± 5.53
 2. a) 2.28 ± 0.56 b) (90%) 2.28 ± 0.32 , (95%) 2.28 ± 0.40
 3. 177500 ± 1764
 4. a) 45 ± 2.08 b) 45 ± 1.47 c) 45 ± 1.20
 5. 136
 6. $] -4.21, 84.21[$
 7. a) 330 ± 488.7 b) 330 ± 270.95
 8. a) -1.2 ± 2.58 b) 2.58
 9. a) 0.28 b) 0,05668
 10. 0.082 ± 0.024
 11. 0.2 ± 0.064
 12. a) 0.58 b) 0.58 ± 0.125 ,
 13. a) 0.35 ± 0.039 b) (95%) 0.35 ± 0.047 , (98%) 0.35 ± 0.056
 14. -0.27 ± 0.120
 15. 0.065 ± 0.0354
 16. $] 2.92, 6.58[$
 17. $] 0.000851, 0.0043[$
 18. $] 0.163, 0.918[$

FICHA N° 8 - TESTES HIPÓTESES

1. $n=39$, $k=1.32$
 2. a) $\alpha=0.5$ b) $\beta=0.3$
 4. a) i) $\alpha=0.3$, $\beta=0.8$ ii) $\alpha=0.3$, $\beta=0.6$ b) C2
 5. a) 0.0559 b) administração
 6. b) ponto crítico 0.30256
 7. a) $\alpha=0.0361$

p	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40
b) função potência	0.0361	0.1841	0.3958	0.6020	0.7639	0.8732	0.9383	0.9729

8. a) 0.8518

θ	2	4	6	8	12	16	20
β	0.0158	0.0855	0.1283	0.1447	0.1455	0.1342	0.1215
μ	37	38	39	40			
α	0,0006	0,003	0,0122	0,0401			

9. a)

μ	41	42	43	44	45	46	47	48
β	0.8944	0.7734	0.5987	0.4013	0.2266	0.1056	0.0401	0.0122

10. a) depende do valor de prova b) Sim

11. a) Não b) Sim c) Sim

12. $Z=2.65$, Rej.

13. $Z=4.78$ Rej.

14. $T= -0.51$ N.Rej.

15. $T= -2.11$ Rej.

16. $T=0.99$ N.Rej.

17. $T=4.033$ Rej.

18. $Z=-3.84$ Rej.

19. $Z=1.08$ N.Rej.

20. $Z=4.82$ Rej

21. $Z=2.60$, Rej.

22. $Z=2.021$ Rej

23. $Z=-1.55$ N.Rej

24. $Z=-2.0$ N.Rej.

25. $Z= -2.5$, Rej.

26. $Q=32.11$ Rej

27. $Q=5.92$ N.Rej.

28. $F=5.49$ Rej

FICHA Nº 9 – ANÁLISE DA VARIÂNCIA

1. a) $F=8.42$ Rej, b) 0.96 ± 0.503

2. $F=12.45$ Rej

3. $F=12.11$ Rej

4. $F=39.3$ Rej

5. a) $F_1=51.67$ Rej b) $F_2=23$ Rej

6. b) $F_1=4.25$ N.Rej, $F_2=4.90$ N.Rej

7. $F_1=7.76$ Rej, $F_2=8.07$ Rej

FICHA Nº 10 – QUI-QUADRADO

1. $Q=35$ Rej

2. $Q=8.46$ Rej

3. $Q=20$ a) Rej b) Rej

4. $Q=29.16$ Rej

5. $Q=1.4$ N.Rej

6. $Q=10.502$ Rej

7. $Q=21.892$ Rej

8. $Q=13.6$ Rej

9. b) $0.0179, 0.1178, 0.3245, 0.3557, 0.1554, 0.0268, 0.0019$ c) $Q=1.45$ N.Rej.