

# Estadística

25-11-2008

## Correcção do Mini-teste

1º

$x_i$	$f_i$	$f_i \times x_i$
11,2	1	11,2
16,8	2	33,6
$x$	3	$2x$
		<u>46,6 + 2x</u>

$$12,5 = \frac{46,6 + 2x}{6} \Leftrightarrow 12,5 \times 6 = 46,6 + 2x \Leftrightarrow$$

$$75 = 46,6 + 2x \Leftrightarrow 75 - 46,6 = 2x \Leftrightarrow$$

$$28,4 = 2x \Leftrightarrow x = \frac{28,4}{2} \Leftrightarrow x = 14,2$$

2º

$f_i \times x_i$	$f_i \times (x_i - \mu)^2$	Cum $f_i$
33	53,7	11
80	29,3	31
130	1,1	57 ←
138	14,4	80
140	64,1	100
<u>521</u>	<u>162,6</u>	

~~$N = \frac{1}{2} = 50$~~   
 $N = \frac{1}{2} = 50$

$n = 5$

$$\mu = \frac{521}{100} = 5,21$$

$$\sigma = \sqrt{\frac{162,6}{100}} = 1,28$$

$$Q_3 = 0,75 \times 100 = 75$$

$$Q_5 = 6$$

3º

$x_i$	$f_i$	$C_i$	$f_i \times C_i$	Cum $f_i$	$f_i \times (C_i - \mu)^2$
0-2	20	1	20	20	276,8
2-5	30	3,5	105	50	44,7
5-8	17	6,5	110,5	67	53,9
8-10	10	9	90	77	183,2
10-12	6	11	60	83	236,6
	<u>83</u>		<u>391,5</u>		<u>795,2</u>

$$\mu = \frac{391,5}{83} = 4,72$$

$$\mu_0 = \frac{P_3}{5} = 4,5$$

$$\mu_1 = 2 + \frac{41,2 + 20}{30} \times (5 - 2) = 4,15$$

$$\mu_0 = 2 + \frac{17}{17 + 20} \times (5 - 2) = 3,38$$

$$P_{80} = 0,80 \times 83 = 66,4 \Leftrightarrow P_{80} = 5 + \frac{66,4 - 50}{17} \times (8 - 5) = 7,89$$

e)  $\mu + \sigma = 7,82$

$$7,82 = 5 + \frac{n - 50}{17} \times (8 - 5) \Leftrightarrow 2,82 = \frac{n - 50}{17} \times 3 \Leftrightarrow \frac{2,82 \times 17}{3} + 50 = n$$

$$n = 66,0$$

$$\frac{66}{83} \times 100 = 79,5\%$$

100 - 79,5 = 20,5% acima de  $\mu + \sigma$

$$f) \quad 7 = 5 + \frac{n-50}{17} \times (8-5) \quad (\Leftrightarrow)$$

$$n = \frac{2 \times 17}{3} + 50 = 61,3$$

$$\frac{61,3}{83} \times 100 = 74\% \quad \text{Com menos de 7 anos}$$