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Homework 6 – Solutions

Primary selected and Secondary not selected	B1	
Discrete selected and Continuous not selected	B1	

1)

3			I	ı	I	
		A		В	С	D
	1	Item		Price in London	Price in Boston	Price in Boston as a percentage of price in London
	2	Apple iPod Nano		£115.00	£87.74	76.3
	3	Elizabeth Arden '8 hour crea	am'	£25.00	£11.56	46.2
	4	Women's Roxanne skinny je	eans	£160.00	£101.79	63.6
	5	Sesame Street Let's Rock E	lmo	£85.00	£40.13	47.2
(a) (b)	all colun	olumn D nn D correct e decimal place	M1 A A1 B1	4	eg; for 76 accept 76 76.29 or 7 accept as CAO	, 76.2956, 76.295, 76.296, 76.2
		Total		5		

(a)(i)	using f_X (= 3465000)		М1	
	using $\frac{\sum fx}{\sum f} \left(= \frac{\text{their } 3465000}{33} \right)$		m1	105 ⇒ SC2
	£105000		A1	Or 104999.50 - ≤105000
(a)(ii)	£59,600 or better (£59,634.30)		М1	
			m1	1_
			m1	
			A1	20.7 mipnes 1912 210
(b)	The mean with severance pay is much than without severance pay.(if (a)(i) >		B1	
	The standard deviation with severance pay is higher (more than double) the standard deviation without severance pay. (if (a)(ii) > £28300)		B1	
	The spread of the remunerations with severance pay is much larger or The remunerations without severance pay are more consistent.		B1	More varied implies B2 (implies the second B1) Cannot compare with no answers done in parts (a)(i) and (a)(ii)
	TOTAL		10	(10)
(a)	37	B2		ght of 22 or 15 or 19 or 18 og or on answer line



c)	Two comments about the ages of males eg	B2	oe eg
	there were a lot of boys in the workhouse		very few young men in the workhouse
	there were many old men in the workhouse		the modal age for males was 0 – 9 years
			B1 for one correct comment



Homework 6 – Solutions



5) (a)	$R = (1 + 0.019)^{12} - 1$	M1			ied by 1.2534 $(1+1.9\%)^{12}-1$ is not accepted unless	
				- 1	34 etc	
	= 1.2534 1	B1		B1 f	or 1.2534	
	= 0.2534			1.0	412	
	= 25.3 %	A1	3	0.25	212 no marks 34 × 12 M1 B1 25%	
(a)((i) Mode	e = <u>26</u>	B1		CAO	
Not		/number of	f days is 13	$\frac{1}{S''(OE)} \Rightarrow$	B1	
(ii)	2 "Modes are 13 and 26" (OE) ⇒ B0 x ≤20 21 22 23 24 25 26 27 28 29 F: 1 3 6 12 20 30 43 50 52 53					
	Median	n = <u>25</u>	B1		CAO	
	IQR = 26 - 2	24 = <u>2</u>	B1		CAO	
Not	tes 1 Median is at CF = 27 to 28, UQ is at CF = 41 to 42 and LQ is at CF = 13 to 14 2 An answer of 25 or/and 2 with clearly shown incorrect method(s) B1 B0 or B0 B1 or B0 B0					
(b)			B1		CAO; accept nothing else	
	Range or Standard deviation or Va	riance	В1	2	CAO; accept naming of only one of these three measures; nothing else	
Not						
(c)	3 Do not accept abbreviations such as "Sd/Var"	or symbo	ols such as	" $\overline{x}/\mu/w$'s/σ/s²/σ²"	
(6)		25.6	Bdep2		CAO $\sum fx = 1408$	
	Mean = <u>25</u>	to 26	(B1dep)		Dependent on 1 st B1 in (b) AWFW	
	Range = <u>45</u>		\uparrow		CAO	
	or		Bdep1		Dependent on 2 nd B1 in (b)	
	Sd(n) = 5.26 or $Sd(n-1) = 5$.31			AWRT (5.26256 or 5.31106) $\sum fx^2 = 37568$	
	Var(n) = 27.7 or $Var(n-1) = 2$	28.2	1	3	AWRT (27.6945 or 28.2074)	

7)	(a)	$C = \frac{1000}{1.215} + \frac{1000}{1.215^2}$	M1	Attempt at RHS involving two terms
		= 823.045 + 677.404	A1	
		= 1500.45	A1	Must show some evidence of working
	(b)	$1500 = \frac{A}{1.2} + \frac{A}{1.2^2}$	M1	
		$1500 \times 1.2^2 = 1.2A + A$	M1	
		2160 = 2.2A		
		A = 981.82	A1	Accept £982
		TOTAL	6	

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