	Question 1 2 how a secondary or country at many personal was personal (dill)									
Q 1 (a)	Using the	first 4 data	a points	Eng.	12,					
-	ī	20	12+	2nd	3rd	4 <sup>th</sup>				
5	0	1.6	2	15	- 3.3333	- 3.4226				
	1	2	8	12	- 8.8095					
-	2	2.5	14	1.4286		4 4				
	3	3,2	15							
10	or reasons str	by set to	1			0 8 3 46	7			
	taking i=	0			2 = 2	]				
9.4.51	$b_i = f[x_i] - f[x_0]$									
	special x,-x, g									
	= 8-2 = 15									
15	2-1.6									
	group of contract of the second									
	$b_2 = f[x_2, x_1] - f[x_1, x_2]$									
-	22-20									
	= 12-15 = -3.333									
20	2.5 - 1.6									
25	$P_{BO,1} = PSA_{1,S}$									
	$b_3 = f[x_3, x_2, x_1] - f[x_2, x_1, x_2]$									
	$x_3 - x_6$									
	= -8.8 +									
	a) trag at mente med formere with other 3.2 - 1.6 id id id id produtteded									
-	* bo = 2 (given in question - 1st y data point)									
	ing tens of of	94 36		(see alter	A 1 (2 - 1 ) 10	hydro fr	2			
	General Fo					<b>新姓 + (8.8)</b> (				
. 30		-				bg (x-x <sub>0</sub> )(x-				
	y(3.3) = 2 + 15(3.3-1.6) + (-3.33)(3.3-1.6)(3.3-2) + (-3.423)(\$\notin 3.3 - 1.6)									
	(3.3-2)(3.3-2.5)									

Q1(b)	Choosing the following points shown in columns 2 and 3										
	7	$\alpha_{t}$	12+	2 <sup>nd</sup>	3rd	4 <sup>th</sup>	melsth mile				
-	0	2	8	12	-8.8095	1.0119	0.4524				
	1	2.5	14	1,4286	-6.7857	2,1429					
5	2	3.2	15	-8.75	-2.5	237					
-	3	4	8	-12		a in the					
	4	4.5	2	Na. 2	h		*				
					.01	68					
	For i = 0 * the points chosen was										
10	$b_s = 8$ such that the value $x = 3.33$										
	was around the centre of										
		b, =	14 - 8	= 12.	×	the range.					
			2.5 - 2	_ ,		7					
15		1,42857									
		b <sub>2</sub> =	1429-12		1908.8 - <del>018</del>	5					
		3.2 - 2									
	-6.7857 - (-8.8095)										
	b <sub>3</sub> = -6.786 (-8.810) = 1.0119										
20	4 - 2 31-25										
201	2.1429 - 1.0119										
	by = 2.143 1012 = 0.4524										
	4.5 - 2										
	2 8 2 7 8 - (ESEC.S-) M - 618 8										
25	Substituting bo, b, b2 b3 and by into the general form shown in part (a)										
	$\frac{y(x)}{2} = \frac{8 + 12(x-2) - 8.81(x-2)(x-2.5) + 1.01(x-2)(x-2.5)(x-3.2)}{2}$										
	$\pm 0.45(x-2)(x-2.5)(x-3.2)(x-4)$ * refer to last page										
	y(3.3) = 14.5433 for cancelled working										
1	(x-x)(x-x) gd + (x-x)(x-x) d + (x-x) d + d = (x)										
Q1(c)	Yes there is a difference of (14.51 - 14.09) = 0.42 or 14.51-14.09 x100= 2.80										
	(2.2 -2.2) (2-2.2) 14.51										
3											

	(2) whereas Therefore what is actually being done is extrapolation which is known								
	to be less accurate.								
-									
	(\$.2-2) (25-2)(3-2) P(10) + (2.5-2)(5-2) 2P009 - (5-2)30 + 8 - (2)4								
	On the other hand, the range of data points selected was such that the x-value of								
5	3.3 is situated within the range. Hence, the method performed is interpolating								
	the y-value at the >c-value desired (3.33). This # yields a much more accorate								
	answer.								
Q1(d)	Using the lagrange polynomial formula and expanding,								
10	AESP o PHOI PIPES - ETD - 21 5.8								
	$y(x) = \sum_{i=0}^{n=0} y_i(x) L_i(x) = y_0 L_0 + y_1 L_1 + y_2 L_2 + y_3 L_3$								
***************************************	$y(x) = y (x-x_1)(x-x_2)(x-x_3)$ $y (x-x_0)(x-x_1)(x-x_2)$								
-	$y(x) = y_0 \frac{(x-x_1)(x-x_2)(x-x_3)}{(x_0-x_1)(x_0-x_2)(x_0-x_3)} + y_0 \frac{(x-x_0)(x-x_2)(x-x_3)}{(x_0-x_0)(x_0-x_2)(x_0-x_3)}$								
0000000									
15	$+ y_2 \frac{(x-x_0)(x-x_1)(x-x_3)}{(x_2-x_0)(x_2-x_1)(x_2-x_3)} + y_3 \frac{(x-x_0)(x-x_1)(x-x_2)}{(x_3-x_0)(x_3-x_1)(x_3-x_2)}$								
	$\frac{1}{2}$ $\frac{1}$								
	from part b								
20	$x_0 = 2$ , $x_1 = 2.5$ , $x_2 = 3.2$ , $x_3 = 4$								
	$y_0 = 8$ $y_1 = 42$ , $y_2 = 15$ $y_3 = 8$								
	Sub $\rightarrow$ y(x) and x=3.3								
	y(3.3) = 28 + (-182) + (65) + 26								
25	75 ( 75 ) ( 4 ) ( 75 )								
	= 14.5433 * continuation on last page								
	interpolation								
Q1(e)	More points mean higher order polynomial. A higher order polynomial does not								
5	mean it is more accurate. More often than not, a high order polynomial								
30									
	leads to 'wiggles' - it oscillates wildly. It can also result in large errors.								

5	y(x) = 8 + 12(x-2) - 8.8095(x-2)(x-2.5) + 1.0119(x-2)(x-2.5)(x-3.2) $+0.4524(x-2)(x-2.5)(x-3.2)(x-4)$								
5	+0.4524 (x-2)(x-2.5)(x-3.2)(x-4)								
5									
	1021 - 10 5122								
of association	y(3.3) = 14.5433								
	the greates at the sevente decred (8.83). This is graphed in much make								
	* The table was rearranged and recalculated as a check								
	a, 1st 2nd 3rd 4th 5th	26							
	3.2 15 -8.75 -7.2917 1.0119 0.4524								
10	Year A was been as a super way or considered I among								
	2								
	2.5 x-2 (x x)								
	4.5 (x-x)(x-x)(x-x) (x-x)(x-x)								
15	(x-x)(x-x)(x-x) , (x-x)(x-x) ,								
	The same answer was obtained.								
	Question 1(d)								
	d Imag mind								
20	Both methods yield the exact same result which is y (3.3) = 14.5433.  This is found to be true when both methods are done to the same polynomials.								
	polynomial order. In this case both were done to the third polynomial								
	/ DE   + / BD   + / SEL   + BD - (B.B)Y								
25									
	find no politicaminos w								
	institution in the contract of								
	ce) More points mean higher ender pulymental. A higher order yellmental d								
5	menylog release the per tent and some of the poly and the polynom								
-30	spral or these och one il wildle satellines it - 'satepas of sheet								