Year 10 EOY EXAM Marking Schedule

Number

	AT(4points) (11)	ABOVE(6points) (4)	BEYOND(8points) (1)
Questions	**11 opportunities.**	**each question can either be a AT, ABor TAAB**	**1opportunitie.**
ONE			
a	$444		
b	25%		
c	$\frac{50}{1200}$ = 1/24 equivalent		
d	$\frac{1}{50}$ x 1200 = 24	24 x 4 = $96	
e		23.32 ÷1.06 = $22	
TWO			
a	0.098, 0.106, 0.16, 0.203, 0.211, 0.23, 0.305		
b	1.3		
c	2.43×10^7		
THREE			
a	22%		
b	279.14- 236.99= 42.15	17.8 % or 18%	
		$\frac{3}{4}$ x 217.73 = $163.30	
FOUR			
a	$\frac{-5}{18}$		.
b	$\frac{5}{18}$		
c	36		
d	$2\frac{17}{20}$ or $57/20$		

FIVE			
a	Total cost = 6999 + 219 = $ 7218 Less the $1000 means the family need to borrow $6968.20 Per weekly payments = $7349.02 ÷ 52 = $141.33	Electrician = 320 x 1.15 = $ 368 Cover = 479 x 0.8 = 383.20 Interest = $ 381.45 The family can afford $\frac{1}{10}$ x 1200 per week which equals $120	Correct working, explanation and answer Pool cost = 6999 + 219 = $7218 Electrician = 320 x 1.15 = $368 Cover = 479 x 0.8 = $383.20 Total cost of pool = 7218 + 368 + 383.20 = $7969.20 Less the $1000 means the family need to borrow $6969.20 Loan cost including interest = 6969.20 x 1.0545 = $7349.02 Per weekly payments = $7349.02 ÷ 52 = $141.33 The family can afford $\frac{1}{10}$ x 1200 per week which equals $120 Therefore the family cannot afford to pay $141.33 each week

Algebra

	AT	ABOVE	BEYOND
Questions	**18opportunities.**	**18 opportunities.**	**5 opportunities.**
ONE			
a	7y		
b	2z+13w		
c	$162q^{11}$		
d	n^4		
e	$3w^9$		
f		$128k^{28}$	
g		$\frac{-3p8}{2}$	
h		13x/72	
TWO			
a	V=706.86cm3		
b		r= $\sqrt{V/\pi h}$	
THREE		working needed	working needed
a	x=40		
b	x=10		
c	w=102	w/6= 17 ; w= 17x6=102	
d		3x=-16, x=-16/3, x=5.33	
e		4y=44, y=11 (Above) 6y-24= 2y+20 4y= 44 y= 11	
f		x=8 or x= -7 both needed	
g	Could they just write (x+4) (x+3)		

		x=-3 or x=-4	
h			31x=48 x=48/31
FOUR			
a	Could x(x+4)	x(x + 4) = 96 x^2 + 4x – 96 = 0	x(x + 4) = 96 x^2 + 4x – 96 = 0 (x – 8)(x + 12) – 0 x = 8 or -12 Cannot have an age of -12, so x = 8 One child is 8 and the other child 8 + 4 = 12
FIVE			
a	C=35h+45		
b		c=35x6.5+45 c=$272.50	
c	35h+45=185		35h+45=185 35h=185-45 h=4hours
SIX		Working needed	Working needed
a	x^2 + 9x		
b		x^2 + 7x + 12	
c		x^2 - 14x + 49	
SEVEN			
a	4(w + 5)		
b	$5y^5(5 – 6y^2)$		
c		$2x^3y^2(3x^3 + 10y^7)$	
d		(x + 9)(x + 4)	
e		2(x2 + 9x + 20)	2(x + 4)(x + 5)
EIGHT			
		2(x + 50 + x) = 900 x = 200 Dimensions are 200cm and 250cm	
NINE			
a	32, 64		
b	13, 16		
c	16,25		

<table>
<tr><td>d</td><td>21,34</td><td></td><td></td></tr>
<tr><td>e</td><td>781, 3906</td><td></td><td></td></tr>
<tr><td>TEN</td><td></td><td></td><td></td></tr>
<tr><td>a</td><td><table><tr><td>Dark stone(D)</td><td>Light stone (L)</td></tr><tr><td>1</td><td>8</td></tr><tr><td>2</td><td>13</td></tr><tr><td>3</td><td>18</td></tr><tr><td>4</td><td>23</td></tr><tr><td>5</td><td>28</td></tr></table></td><td></td><td></td></tr>
<tr><td>b</td><td></td><td>L=5D+3</td><td></td></tr>
<tr><td>c</td><td></td><td>L=5X24+3
L=123</td><td></td></tr>
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<tr><td>ELEVEN</td><td></td><td></td><td></td></tr>
<tr><td>a</td><td></td><td>Graph, Y=-2x+1 (check with y=mx+c)</td><td></td></tr>
<tr><td>b</td><td></td><td></td><td>Graph, Y=3/5x +1</td></tr>
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Trigonometry

	AT	ABOVE	BEYOND
Questions	**5**	**5 opportunities.**	**1 opportunity.**
ONE			
a	8.5		
b	4.9		
c	2.7		
TWO			
a	7.4 m		
b	11.2 m		
THREE			
a	18.8 cm	y= 8tan67= 18.8cm	
b	48.6	y= Sin^{-1}(9/12)= 48.6	
FOUR			
a		6.18 m	
b		14.0^{o}	
FIVE			
a		180-tan-1(25/13) turn=180-62.5 =117.5	
b			90 – 62.5 = 27.5 bearing = **028^{o}** 3digits rounded to nearest whole number.

Statistics

	AT	ABOVE	BEYOND
Questions	**6**	**2 opportunities.**	**1 opportunity.**
ONE			
a	Any correct statement, some examples are: - Higher in the winter months and lower in summer months. - Highest month is July both years. - Lowest months are February on 2017 January on 2018 - An increasing trend from January to July then a decreasing trend from August to December.		
b	900		
TWO			
a	A correct statement, see next column.	-	Three correct statements such as: - The Faafoi family has a much longer box and whisker graph than the other family, which means they have more variation in electricity usage. - The Sister's family has a lower median of 230 compared to the Afaafoi family's median of 262.5

			- The Faafoi family has two clusters of electricity usage a lower one around 180 and a higher one around 280. The Sister's family is nearly trimodal..
b	For AB: must answer the question-No bec medians overlap, If answered Yes because median is bigger than its AT	The Faafoi family have a bigger Median, which suggest they use more electricity. But the median is within the sister middle 50%, therefore we cannot be sure that there is any difference in electricity usage between the two families. The Faafoi family has a very high value ($450) and a very low value that spreads there graph out. If these were removed the box and whisker graph would be similar to his sisters. So at times they use more electricity , but we cannot say they always do. He is incorrect.	
THREE			
a	874.9		
b	886.5		
c	900		
d	950-780= 170		
FOUR			
		For TAAB - look for trend statement with description of strength.	The graph is quite messy with dots not showing a very strong upward pattern. I can draw in a trend line pointing upwards showing that as the grocery bill get higher the percentage of organic food increases, but it is not very strong as many points would be far away from the trend line. The graph weakly supports Grandad's opinion

Marking Code: Please write these codes on the script.
No double dipping. Only one of these grades.
N0- left blank or completely wrong.
N1 - Made a start in the correct direction.
N2- made some progress
A3-almost correct. Did not simplify or missed units.
A4- fully correct
M5-almost correct. Did not simplify or missed units.
M6-fully correct
E7-almost correct. Did not simplify or missed units.
E8-fully correct
All Merit and Excellence questions must be backed up with some working.
Any Correct answer only = A4.

Strand	AT (40)	ABOVE (29)	BEYOND (8)	Total
Number	11*4=44	4*6=24	1*8=8	76
Algebra	18*4=72	18*6=108	5*8=40	220
Trigonometry	5*4=20	5*6=30	1*8=8	58
Statistics	6*4=24	2*6=12	1*8=8	44
Grand Total	160	174	64	398

AT = 40% - 60% **138 - 238**
ABOVE = 61% - 84% **239 - 334**
BEYOND = +85% ≥**335**

CAT Answers

NUMBER		ALGEBRA	
1	$444	**1**	7y
2	25%	**2**	2z+13w
3	$\frac{50}{1200}$ = 1/24 equivalent	**3**	$162q^{11}$
	24 x 4 = $96	**4**	n^4
	23.32 ÷1.06 = $22	**5**	$3w^9$
	0.098, 0.106, 0.16, 0.203, 0.211, 0.23, 0.305		$128k^{28}$
	1.3		$\frac{-3p8}{2}$
	2.43×10^7		13x/72
		2	
	22%		V=706.86cm3
	17.8 % or 18%		r= $\sqrt{V/\pi h}$
	$\frac{3}{4}$ x 217.73 = $163.30		
		3	x=40
	$\frac{-5}{18}$		x=10
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	36		3x=-16, x=-16/3, x=5.33
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