Year 10 Maths Exam 2018 Marking Schedule

Marking Code: Please write these codes on the script.
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.

Final Overall Grade boundaries. Use holistic judgement for borderline cases.

Achieved	79 to 229
Merit	230 to 319
Excellence	320 to 440

Topic	A	M	E	Grand Total points	Total questions
Number	11	5	1		17
Algebra Pattern and graphs	21	19	6		46
Trigonometry	5	4	2		11
Statistics	6	2	2		10
points	43x4	30x6	11x8		
Total points	172	180	88	440	
				Grand total questions	84

_Number

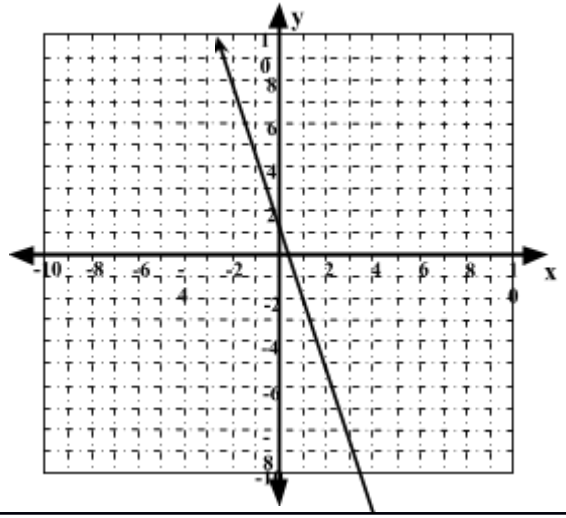
	Achieved	Merit	Excellence
Questions			
ONE			
a	$1.74x10^8$		
b		192,500,000 or $1.925x10^8$	
c	$\frac{8}{32}$ or $\frac{1}{4}$		
d	1,400,000		
e	60%		
f		55X1.15=$63.25	
TWO			
a	38, 280,000		
b	70%		
c	0.30 x 42 = 12.60 (calculating 30%)	$29.40	
d		¾ X 17000=12,750	
THREE			
a	1.16, 1.22, 1.6, 2.03, 2.04, 3.05,3.42		
b	3352.50= $3400		
FOUR			
a	$\frac{-5}{18}$		.
b	$\frac{5}{18}$		
c	36		
d		1-($\frac{3}{8}$ + $\frac{2}{5}$) = $\frac{31}{40}$ $\frac{9}{40}$x 800 =180	
FIVE			
a			$\frac{1}{5}$ x 2250 = $450 for insurance Eurail pass discount = 919 x 0.85 = €781.15 Cost of Eurail in NZ dollars = 781.15 x 1.68 = $ 1312.33 Youth hostel cost 80 + 50 x 22 = $1180 Food Cost = 23 x 40 = $920 Total cost = $6112.33 Weeks = $6112.33 ÷ 250 = 24.4, 25 weeks to save

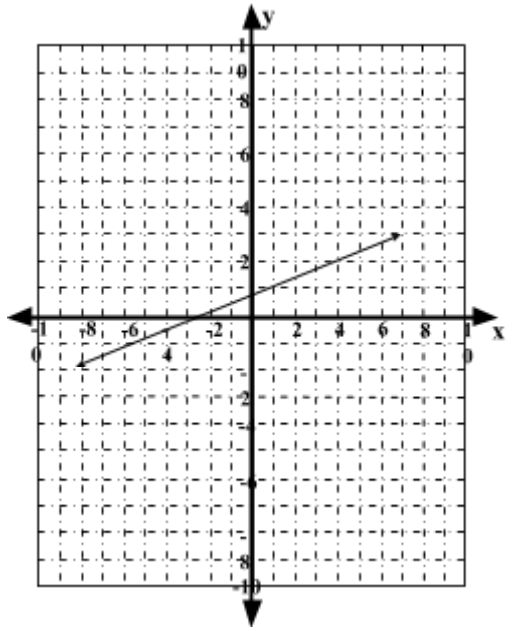
Total A/M/E	11	5	1

Algebra

	Achieved	Merit	Excellence
Questions			
ONE			
a	8y + 3z		
b	7xy – 6y		
c	$35p^8$		
d	n^4		
e	$7w^3$		
f	k^{28}		
g		$15y^4$	
h		$\frac{37x}{56}$	
TWO			
a	502.65(2dp) cm^3		
b		$h=\frac{v}{\pi r^2}$	
THREE			
a	x = 8		
b	p = 16		
c	x = 2		
d		y = 21	
e		m = 4.25 or $\frac{17}{4}$	
f		3x –6 = 5x + 20 x = -13	
g		x= -5 and 7 need both	
h		(x + 4)(x + 6) = 0 x = -4 and -6 need both	
i			$\frac{15x}{24} + \frac{16x}{24} = 2\frac{31x}{24}$= 2 x = $\frac{48}{31}$ ∨ 1.548387097
FOUR			
			n(n+2) = 48 n^2 + 2n = 48 n^2 + 2n – 48 =0 (n – 6)(n+ 8) = 0

			N = 6, or -8 Can't be -8 as has to be a positive integer, therefore n = 6, so n + 2 = 8 Numbers are 6 and 8
FIVE			
a	C = 150 + 8I		
b		$2, 870	
c			8I+150=3950. I=475
SIX			
a	27x – 8		
b		$x^2 + 7x – 5x – 35 = x^2 + 2x – 35$	
c		$x^2 - 5x – 5x - 25 = x^2 - 10x + 25$	
SEVEN			
a	5(y + 5)		
b	x(y + z)		
c	$8w^3(w^2 – 4)$ or $8w^3(w – 2)(w+2)$		
d		$14x^5y^3(x^2 – 2y^6)$	
e		$(y + 6)(y + 6)$ or $(y + 6)^2$	
f			$2(x^2 + 7x + 12)$ $2(x + 4)(x +3)$
EIGHT			
a		P = 4w + 20	
b		4w + 20 = 100 w = 20 Length = 30 and width = 20	
NINE			
a	21, 26		
b	12.5, 6.25		
c	16, 25		
d	15, 21		
e	n –5, n –7		
TEN			
a	290, 310, 340, 370, 400, 430, 460		
b		A = 30w + 170	
c		2700 = 30w + 170 w = 84.3 = 85 weeks	

d			Correctly plotted points with even scales on both axes. Points not joined up.
e		y intercept=week0. Gradient=weekly deposit $30 First line is stepper and has a positive gradient; second line is less steep and has a negative gradient.	
ELEVEN			
a			

b			
c			
Total A/M/E	21	19	6

Trigonometry

	Achieved	Merit	Excellence
Questions			
ONE			
a	9.2		
b	4.9		
c	5.4		
TWO			
a	10.8m		
b	6.0m		
THREE			
a		39.8°	

b		10.4cm	
FOUR			
		$\tan^{-1} = \frac{30}{245}$ angle = 6.98° (1dp) Angle is too big, so the ramp does not meet code.	
FIVE			
			Diagonal length = 6.4m Total timber needed = 8 x 4.5 + 2 x 6.4 = 48.8 m
SIX			
a		Distance = 25 km	
b			$\cos\theta = \frac{60}{65}$, $\theta = 22.6°$ Bearing = 180 + 22.6 = 202.6
Total A/M/E	5	4	2

Statistics

	Achieved	Merit	Excellence
Questions			
ONE			
a. One similarity and One difference	Any correct statement, some examples are: - Both arrivals and departures have an increasing trend. - Departures have had a much steeper increasing trend than arrivals since 2004 - Both arrivals and departures had a decreasing trend between 2001 and 2004 - Since 2008 departures have become larger than arrivals since 2000		-

b	Any number close to 8000		
c		There is no “correct” answer for this. Students could come up with several reasons why or why not. For example: the amount of departures could depend on the economy. If the economy continues to do well, then people will have money to be able to afford to go away on holiday. So the trend will continue	.
TWO			
			Three correct statements such as: - Median number of visitors to Queenstown and Rotorua are very similar, both around 550 000. - The interquartile range of visitors to Queenstown and Rotorua are very similar, both around 100 000. - Queenstown has more variation in the number of visitors, the graph is much longer. - Queenstown visitor numbers are skewed to the right, as there were two years with very high tourist numbers, over 1 million. **AND** a correct conclusion - The medians are very close and the boxes (IOR) of both towns overlap, therefore it is likely that there is no difference between the number of tourist that visit Queenstown and Rotorua.
THREE			
a	354.3 (1dp)		
b	344		

c	344		
d	216		
FOUR			
a		White bread: 229, 258, 279.5, 286, 291	
		Brown bread: 238, 251.5,259, 267, 270	
Total A/M/E	5	2	1
Grand total A/M/E	42	30	10
Total questions	82		