EXAMINATIONS COUNCIL OF SWAZILAND

CONFIDENTIAL
November 2018

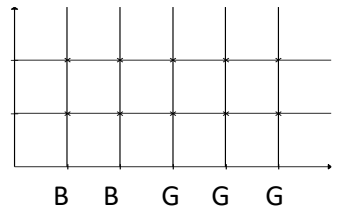
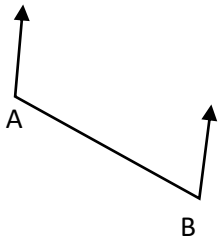
JUNIOR CERTIFICATE EXAMINATION

ADDITIONAL MATHEMATICS

MARK SCHEME

MAXIMUM MARK 100

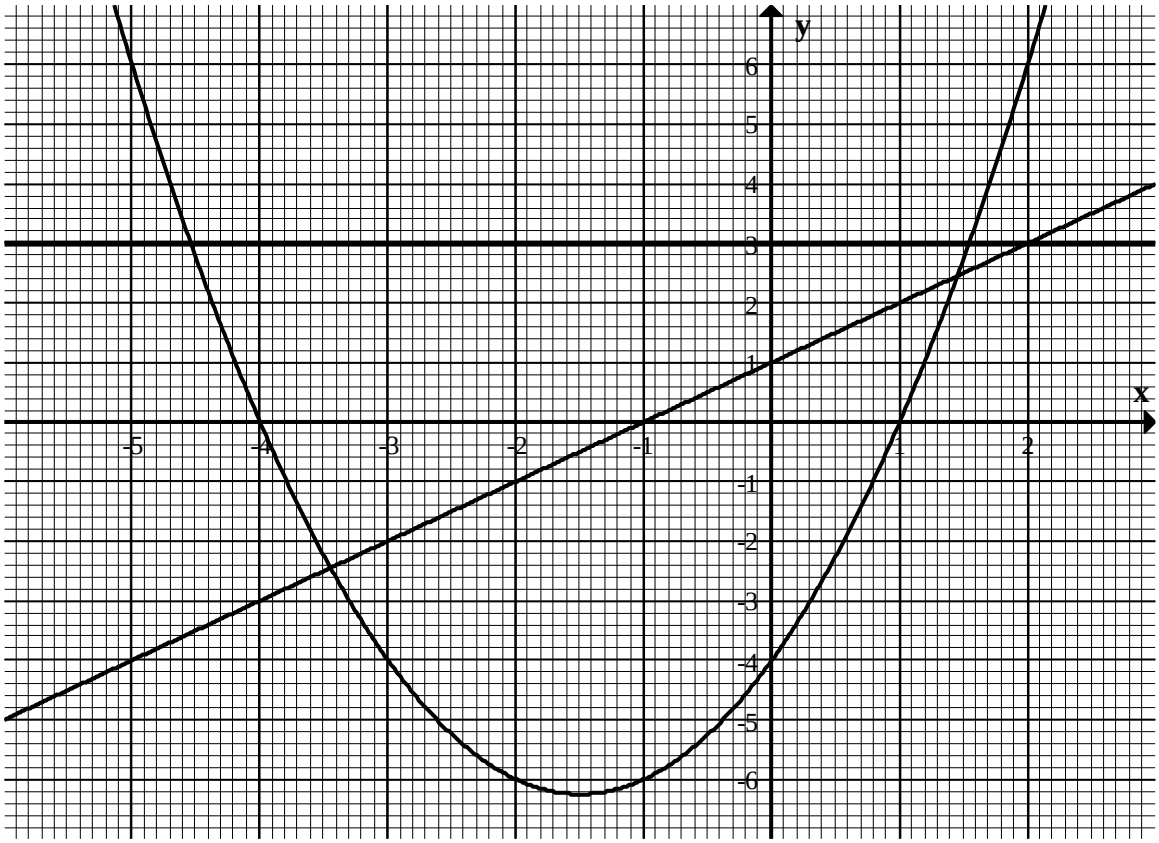
ADD MATHS 2018 MARK SCHEME

Question		Marks	Comment
1(a)		B3	B1 for 1 correct axes
(b)(i)	$\frac{2}{10}$	B2	
(ii)	$\frac{3}{10}$	B2	
2 (a) (i)	Correct sketch	B2	
(ii)	420× sin40 oe 270	M2 A1	
(iii)	420 ×cos40 oe 321.7	M2 A1	
(b)	230×tan14 57.3	M2 A1	
3 (a) (i)	$\frac{2}{4}=\frac{1}{2}$	B2	
(ii)	$\frac{2-5x}{4}=8$ $2-5x=32$ $x=-6$	M1 M1 A1	
(b)	2 > 7(3x – 1) 9 > 21x $x<\frac{3}{7}$	M1 M1 A1	
	x = 3, y = 0	B3	B2 for one correct sol. SC1 for correct substitution
4 (a)	Sin $^{-1}$x = $\frac{4}{10}$ ABD = 23.6	M2 A1	**M1 for** Sin x = $\frac{4}{10}$
(b)	DB = $\sqrt{10^2-9^2}$ 9.17 9.17 – 6.2 2.97	M2 A1 M1 A1	

(c)	$\frac{1}{2} \times their 2..97 \times 4$ 5.94	M1 A1	
5 (a) (i)	$A = 2\pi r^2 + 2\pi rh$ $2\pi rh = A - 2\pi r^2$ $h = \frac{A - 2\pi r^2}{2\pi r}$	M1 M1 A1	
(ii)	$\frac{634 - 2 \times 3.14 \times 5^2}{2 \times 3.14 \times 5}$ $\frac{477}{31.4}$ 15.19	M1 M1 A1	
(b)	(x – 4)(x + 3)	B2	B1 for each
(c) (i)	$\frac{3(2x-1) - 4(x-2)}{(x-2)(2x-1)}$ $\frac{6x - 3 - 4x + 8}{(x-2)(2x-1)}$ $\frac{2x+5}{(x-2)(2x-1)}$	M1 M1 A1	
(ii)	$\frac{(x-5)(x+5)}{(x+3)(x+5)}$ $\frac{(x+6}{(x+3)}$	M2 A1	B1 for correct factorisation for either numerator or denominator
6 (a) (i)	*-d*	B1	
(i)	*4d*	B2	
(ii)	*c+2d*	B2	
(iii)	$\frac{-c}{4} - \frac{1}{2}d$	B2	
(b) (i)	$\begin{pmatrix} 3 \\ -2 \end{pmatrix}$	B1	
(ii)	$\begin{pmatrix} 3 \\ -2 \end{pmatrix} + \begin{pmatrix} -9 \\ 6 \end{pmatrix}$ $\begin{pmatrix} -6 \\ 4 \end{pmatrix}$	M1 A1	

(iii)	$\sqrt{3^2+(-2)^2}$ 3.61	M1 A2	
(iv)	QS = $3\begin{pmatrix}3\\-2\end{pmatrix}$ = 3PQ	B2	
7 (a) (i)	$\begin{pmatrix}16\\8\end{pmatrix}$	B2	Subtract 1 for each wrong
(ii)	$\begin{pmatrix}-15 & 25\\6 & -10\end{pmatrix}$	B2	
(iii)	$\begin{pmatrix}2 & -3\\0 & -4\end{pmatrix}\begin{pmatrix}2 & -3\\0 & -4\end{pmatrix}$ $\begin{pmatrix}4 & 6\\0 & 16\end{pmatrix}$	B1 B2	
(b)	5, 6, 7, 8	B2	
(c) (i)	3 by 2	B2	
(ii)	$\begin{pmatrix}0 & 0\\0 & 0\\0 & 0\end{pmatrix}$	B1	
8 (a)	a = -6, b= 0 c = 6	B3	
(c)	parabola	B1	
(d)	x = 1.5	B2	
(e) (i)	-4.5 and 1.5	B2	
(ii)	-3.4 and 1.4	B3	B1 for graph
9 (a)	25	B1	

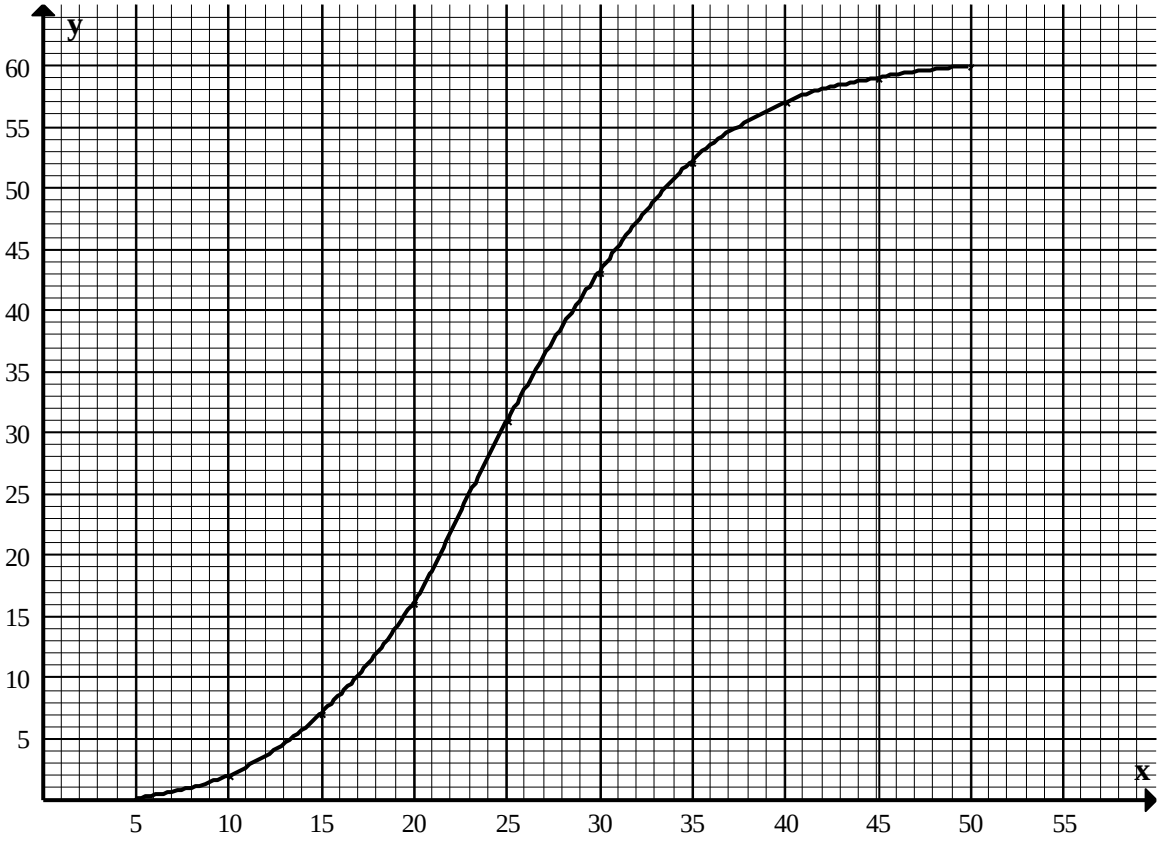
8(b)



9 (b)

Marks	5	10	15	20	25	30	35	40	45	50
No. of learners	0	2	7	**16**	**31**	**43**	**52**	**57**	**59**	**60**

9(c)



9 (d) 49 B2