SULIT
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Matematik Tambahan
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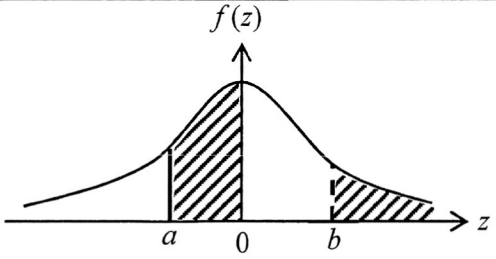
MAJLIS PENGETUA SEKOLAH MENENGAH MALAYSIA
CAWANGAN NEGERI SEMBILAN DARUL KHUSUS

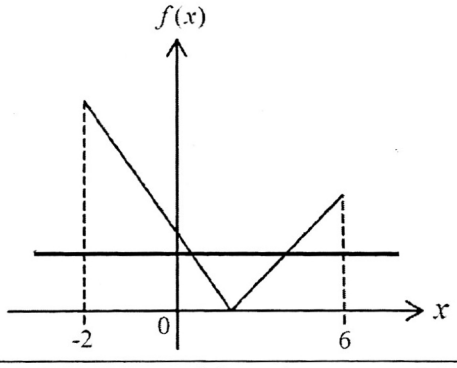
PROGRAM PENINGKATAN AKADEMIK TINGKATAN 5
SEKOLAH-SEKOLAH MENENGAH NEGERI SEMBILAN 2025

PERATURAN PERMARKAHAN
MATEMATIK TAMBAHAN KERTAS 1

Soalan		Skema Pemarkahan	Markah
1	(a)	$Y=\frac{y}{x}$	N1
	(b)	$\frac{1}{5}=p(2)+q$	K1
		$q=\frac{1}{5}-2p$	N1
			3
2	(a)	$fg(x)=2-\left(qx^2+r\right)$	K1
		$-q=3$ @ $2-r=-8$	K1
		$q=-3$ dan $r=10$	N1
	(b)	$g^2(0)=g(-3(0)^2+10)$	K1
		$=-290$	N1
			5
3	(a)	10^m @ $(a^2b)^m$	K1
		$a^2b=10$	K1
		$a=\pm\sqrt{\frac{10}{b}}$	N1
	(b)	$\frac{\log_2 2x}{\log_2 16}$ atau $\frac{\log_2 2x}{\log_2 2^4}+\log_2 x=-1$	K1
		$\log_2 (2x)^{\frac{1}{4}}+\log_2 x=-1$	
		$\log_2 (2x)^{\frac{1}{4}}(x)$ @ $2^{\frac{1}{4}}x^{\frac{5}{4}}$ @ 2^{-1}	K1
		$x^{\frac{5}{4}}=2^{-\frac{5}{4}}$ atau $x^{\frac{5}{4}}=\left(\frac{1}{2}\right)^{\frac{5}{4}}$	
		$x=\frac{1}{2}$	N1
			6

Soalan		Skema Pemarkahan	Markah
4	(a)	$\begin{pmatrix}3\\-2\end{pmatrix}+\begin{pmatrix}12\\7\end{pmatrix}$	K1
		$\begin{pmatrix}15\\5\end{pmatrix}$	N1
	(b)	$\begin{pmatrix}3\\-2\end{pmatrix}+\overrightarrow{OR}=\frac{3}{5}\begin{pmatrix}15\\5\end{pmatrix}$	K1
		$\sqrt{6^2+5^2}$	K1
		$\sqrt{61}$ atau 7.810	N1
			5
5	(a)	$m_{BD}=\frac{1}{2}$ dan $\frac{1}{2}m=-1$	K1
		$y-1=-2(x-5)$	K1
		$y=-2x+11$	N1
	(b)	$\frac{2n+5m}{m+n}=4$	K1
		$m:n=2:1$	N1
			5
6	(a)	$r(0.52)=5.98$	K1
		11.5	N1
	(b)	$\frac{1}{2}(^*11.5)^2(0.52)-\frac{1}{2}(6)^2(0.52)$	K1
		25.025	N1
			4
7	(a)	Janjang geometri // Jujukan geometri & $r_1=r_2=x$	P1
	(b)	$a\times1.085=32550$ atau $a=30000$	K1
		$\frac{30000(1.085^6-1)}{1.085-1}-\frac{30000(1.085^3-1)}{1.085-1}$	K1
		$125004\times30\%$	K1
		37501	N1
			5

Soalan		Skema Pemarkahan	Markah
8	(a)	$(\tan x+3)(\tan x-1)=0$	K1
		sudut rujukan = 45° *dan* 71.57°	K1
		45° *dan* 108.43°	N1
	(b)(i)	$\sqrt{1-p^2}$	N1
	(ii)	$2\sin\frac{\theta}{2}\cos\frac{\theta}{2}$	K1
		$2p\sqrt{1-p^2}$	N1
			6
9	(a)	(i) -2	P1
		(ii) 1	P1
	(b)	(i) $3(1)^2-p(1)+3=0$	K1
		6	N1
		(ii) $\frac{d^2y}{dx^2}=6(1)-6$	K1
		$\frac{d^2y}{dx^2}=0$ dan L ialah titik lengkok balas	N1
			6
10	(a)(i)	$\mu=0$, $\sigma^2=1$	N1
	(ii)		N1
	(iii)	1	N1
	(b)(i)	3	K1
	(ii)	$P(X=0)=P(X=3)$ atau ${}^3C_0p^0q^3={}^3C_3p^3q^0$	K1
		$(1-p)^3=p^3$	K1
		$p=\frac{1}{2}$	N1
			7

Soalan		Skema Pemarkahan	Markah
11	(a)	$\lvert 2(-2)-5 \rvert$	K1
		$0 \le f(x) \le 9$	N1
	(b)	$2x-5>9$, $2x-5<-9$	K1
		$x>7$, $x<-2$	N1
	(c)		N1
		Tidak mempunyai fungsi songsang kerana ujian garis mengufuk sentuh graf pada dua titik.	N1
			6
12	(a)(i)	${}^3P_1 \times {}^4P_3$ @ $3\times4\times3\times2$	K1
		72	N1
	(ii)	24	N1
	(b)	${}^4C_3 \times {}^5C_1$ @ ${}^4C_4 \times {}^5C_0$	K1
		${}^4C_3 \times {}^5C_1 + {}^4C_4 \times {}^5C_0$	K1
		21	N1
			6
13	(a)	$x = \dfrac{\sqrt{3}-\sqrt{7}}{\sqrt{m}} \times \dfrac{\sqrt{m}}{\sqrt{m}}$	K1
		$x = \dfrac{\sqrt{3m}-\sqrt{7m}}{m}$	N1
	(b)	$\log_a m^n = nx$	K1
		$\log_a m^n = n\log_a m$	N1

13	(c)	$(3\times 2^{\frac{k}{2}-1})^2 = (2^{\frac{k}{2}-1})^2 + 1^2$		K1
		$9\times 2^{k-2}$ @ 2^{k-2}		K1
		$2^{k-2} = 2^{-3}$ @ $2^k = 2^{-1}$		K1
		$k = -1$		N1
				8
14	(a)	(i)	$a < 0$	P1
		(ii)	$b^2 - 4ac < 0$	P1
	(b)	(i)	$f(x) = a(x-5)^2 + 6$ atau setara	K1
			$0 = a(0-5)^2 + 6$ atau setara	K1
			$f(x) = -\frac{6}{25}(x-5)^2 + 6$ atau setara	N1
		(ii)	$4.3 = -\frac{6}{25}(x-5)^2 + 6$ atau setara	K1
			$x = 7.661, 2.339$ (dan penyelesaiannya)	K1
			Reka bentuk pintu gerbang tersebut dapat dilalui dua buah kenderaan dengan serentak kerana $7.661 - 2.339 > 2.1\times 2$.	N1
				8
15	(a)	Vektor paduan bahagian (a) atau di bahagian (c) $700\underset{\sim}{i} - 100\underset{\sim}{j} + a\underset{\sim}{i} + b\underset{\sim}{j}$ @ $(-700\underset{\sim}{i} - 100\underset{\sim}{j}) + (20\underset{\sim}{i} + 100\underset{\sim}{j})$		P1
		$-100 + b = 0$		K1
		$b = 100$		N1
	(b)	$900\underset{\sim}{i} = (700 + a)\underset{\sim}{i} \times 1.25$ (sesaran=halajuxmasa)		K1
		$a = 20$		N1
	(c)	$\frac{900}{680}$		K1
		1.324 jam		N1
	(d)	$\sqrt{700^2 + 100^2} = 707.11$		N1
				8