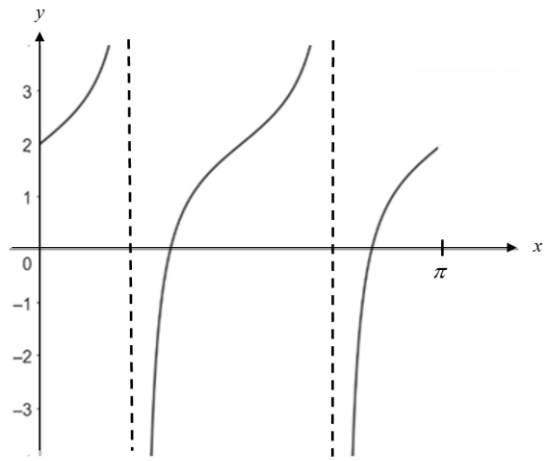
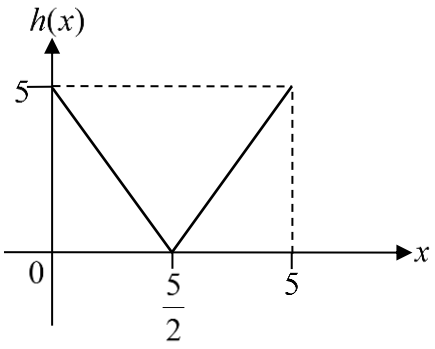
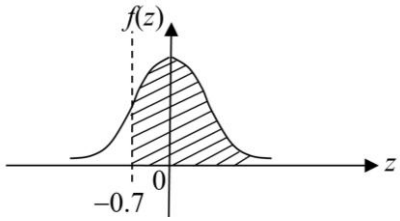
MODUL PINTAS 2025 MATEMATIK TAMBAHAN
PERATURAN PEMARKAHAN TINGKATAN 5 KERTAS 1

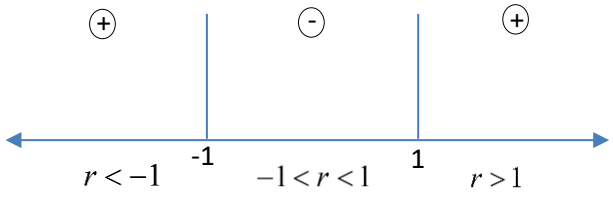
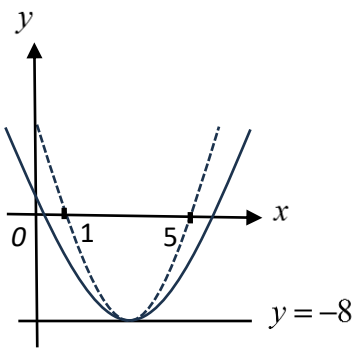
SOALAN			PEMARKAHAN	SUB MARKAH	MARKAH
1	(*a*)		$\frac{1}{2}x+4=-\frac{1}{2}x+2$ @ setara	K1	
			$B(-2,3)$	N1	
			$\left(\frac{1(-2)+2(x)}{2+1}\right)=-2 \quad @ \quad \left(\frac{1(-1)+2(y)}{2+1}\right)=3$	K1	
			$N(-2,5)$	N1	
	(*b*)		$y-(-1)=-\frac{1}{2}[x-(-2)]$ @ setara	K1	
			$y=-\frac{1}{2}x-2$	N1	
					6
2	(*a*)		$h'(x)=3(1-2x)^2(-2)$	K1	
			$h'(1)=-6(1-2(1))^2$	K1	
			-6	N1	
	(*b*)		$\frac{dy}{dx}=3-\frac{4}{x^2}$	K1	
			$3-\frac{4}{(2)^2}$	K1	
			$2\times(-3)$	K1	
			-6	N1	
					7

3			$b=-2k \quad @ \quad a=k-4$	K1	
			$b=-2(a+4)$	K1	
			$a=\dfrac{-b-8}{2}$	N1	
					3
4			Hasil darab semua sebutan untuk menghapuskan satu anu @ Ungkapkan x dalam sebutan y dan z @ Ungkapkan y dalam sebutan x dan z @ Ungkapkan z dalam sebutan y dan x	P1	
			Hapus anu pertama dengan penghapusan @ penggantian	K1	
			Hapus anu kedua dengan penghapusan @ penggantian	K1	
			$x=3 \quad @ \quad y=-2 \quad @ \quad z=4$	N1	
			$y=-2 \ \ \& \ \ z=4 \quad @$ $x=3 \ \ \& \ \ z=4 \quad @$ $x=3 \ \ \& \ \ y=-2$	N1	
					5
5	(*a*)		 Bentuk graf tangen 2 kitaran lengkap	P1 P1	

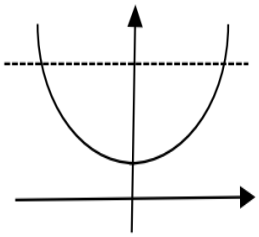
			Translasi graf sebanyak 2 unit ke atas	P1	
	(*b*)		$\frac{\pi}{9}$	N1	
					4
6	(*a*)		$\frac{L}{\theta}=\frac{\pi j^2}{2\pi}$ atau setara	K1	
			$L=\frac{1}{2}j^2\theta$	N1	
	(*b*)		$\frac{1}{2}(12)(16)\sin\left(\cos^{-1}\frac{12}{16}\right)$ atau $\frac{1}{2}(12)(\sqrt{16^2-12^2}$ setara ATAU $\frac{1}{2}(16)^2\left[\left(\cos^{-1}\frac{12}{16}\right)\times\frac{3.142}{180}\right]$ atau setara	K1	
			$2\left[\frac{1}{2}(12)(16)\sin\left(\cos^{-1}\frac{12}{16}\right)\right]+$ $\frac{1}{2}(16)^2\left[\left(\cos^{-1}\frac{12}{16}\right)\times\frac{3.142}{180}\right]$	K1	
			219.52	N1	
					5
7	(*a*)		3	N1	
	(*b*)	(i)	$-5\le 2x-5\le 5$	K1	
			$0\le x\le 5$	N1	
		(ii)			

			Bentuk V Titik $(0,5),\left(\frac{5}{2},0\right)$ dan $(5,5)$ di plot	P1 P1	
					5
8	(*a*)		0.1875	P1	
	(*b*)	(i)	$\frac{X-55}{10}=0.5$	K1	
			60	N1	
		(ii)	$P\left(z>\frac{48-55}{10}\right)$	K1	
			 & $1-P(z>0.7)$	K1	
			75.80	N1	
					6
9	(*a*)		$\frac{1}{2}C_0=C_0e^{-0.15t}$	K1	
			$\ln\ e^{-0.15t}=\ln\frac{1}{2}$	K1	
			$t=5$	N1	
	(*b*)		$AB^2=\left(\sqrt{6}\right)^2+\left(\frac{\sqrt{2}}{\sqrt{3}+\sqrt{2}}\right)^2$ @ setara	P1	
			Darab Konjugat $\left(\frac{2}{5+2\sqrt{6}}\times\frac{5-2\sqrt{6}}{5-2\sqrt{6}}\right)$ @ setara	K1	

			Ya & $AB = \sqrt{16 - 4\sqrt{6}}$	N1	
					6
10	(*a*)		$y = \frac{4}{2}x^2 + 9x + c$	K1	
			Ganti $(2, -3)$ ke dalam $y = \frac{4}{2}x^2 + 9x + c$ & selesaikan c	K1	
			$y = 2x^2 + 9x - 29$	N1	
	(*b*)	(i)	9	N1	
		(ii)	$2\int_1^3 f(x)\,dx$ @ $\int_1^3 7\,dx - 2\int_1^3 f(x)\,dx$	P1	
			$[7x]_1^3$ & $[7(3) - 7(1)]$	K1	
			6	N1	
					7
11	(*a*)		$p = -1$	P1	
	(*b*)		$(-8)^2 - 4(-1)q = 0$	K1	
			$q = -16$	N1	
					3
12	(*a*)		$240 = x + (3-1)(20)$	K1	
			$T_6 = (200) + (6-1)20$	K1	
			300	N1	

	(*b*)		$10320 = \frac{n}{2}\left[2(200)+(n-1)(20)\right]$ @ $10320 = \frac{n}{2}\left[2(2100)+(n-1)(400)\right]$	K1	
			$20n^2+380n-20640=0$ & $400n^2+3760n-20640$ dan selesaikan	K1	
			24 bulan & 3 tahun 11 bulan @ setara	N1	
			Pelan A & 24 bulan < 3 tahun 11 bulan @ setara	N1	
					7
13	(*a*)		$2^2-4r(r)<0$	K1	
			Titik ujian -3: $(-3+1)(-3-1)>0$ Titik ujian 0: $(0+1)(0-1)>0$ Titik ujian 3 $(3+1)(3-1)>0$  	K1	
			$r<-1$, $r>1$	N1	
	(*b*)	(i)	 	N1	
		(ii)	$f(x)=2\left[x^2-2mx+\left(\frac{-2m}{2}\right)^2-\left(\frac{-2m}{2}\right)^2+m^2+n\right]$	K1	
			$f(x)=2(x-m)^2+2n$	N1	

			$2n = -8$ @ $m = \frac{1+5}{2}$	K1	
			$m = 3$ & $n = -4$	N1	
					8
14	(*a*)		$\overrightarrow{DY} = \lambda \overrightarrow{DT}$ @ $\underset{\sim}{a} + 6\underset{\sim}{b} = \lambda\left(\frac{3}{2}\underset{\sim}{a} + 9\underset{\sim}{b}\right)$	K1	
			$1 = \frac{3}{2}\lambda$ @ $6 = 9\lambda$	K1	
			$\lambda_1 = \lambda_2$ @ $\overrightarrow{DY} = \frac{2}{3}\overrightarrow{DT}$ @ setara	N1	
			Garis lurus melalui titik Y @ setara	N1	
	(*b*)	(i)	$\overrightarrow{UR}$	N1	
		(ii)	$\sqrt{75}$ @ setara	N1	
			$\frac{\left(-5-\frac{5}{2}\right)\underset{\sim}{i} + \left(0-\frac{5\sqrt{3}}{2}\right)\underset{\sim}{j}}{\sqrt{75}}$	K1	
			$-\frac{\sqrt{3}}{2}\underset{\sim}{i} - \frac{1}{2}\underset{\sim}{j}$	N1	
					8
15	(*a*)		$y = \frac{k+x}{3x}$	K1	
			$f(x) = \frac{k}{3x-1}, x \neq \frac{1}{3}$	N1	
	(*b*)		$\frac{k}{3(1)-1} = 4\left[\frac{2}{3(\sqrt{2})^2+2}\right]$	K1	
			$k = 2$	N1	
	(*c*)		$\frac{2}{3g(x)-1} = \frac{2}{3x^2+2}$	K1	

			$g(x) = x^2 + 1$	N1	
			Ujian garis mengufuk 	N1	
			Tidak wujud & Garis mengufuk memotong graf pada 2 titik.	N1	
					8