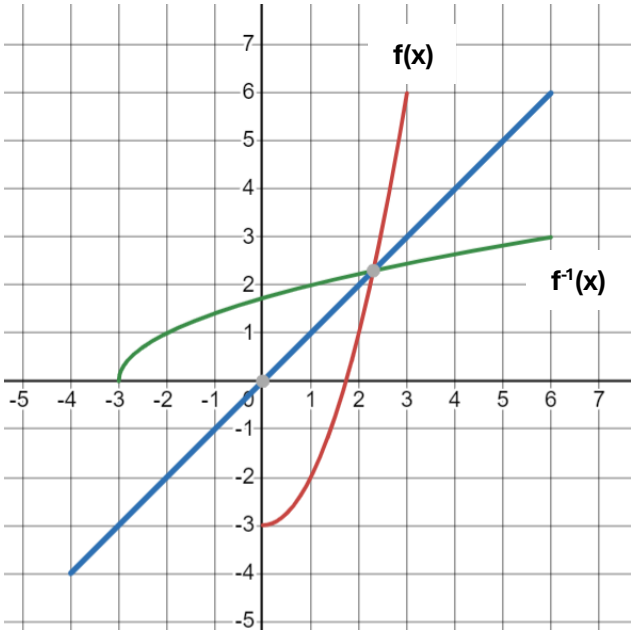
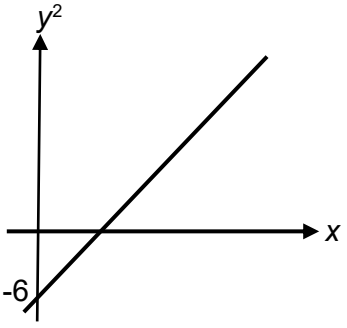
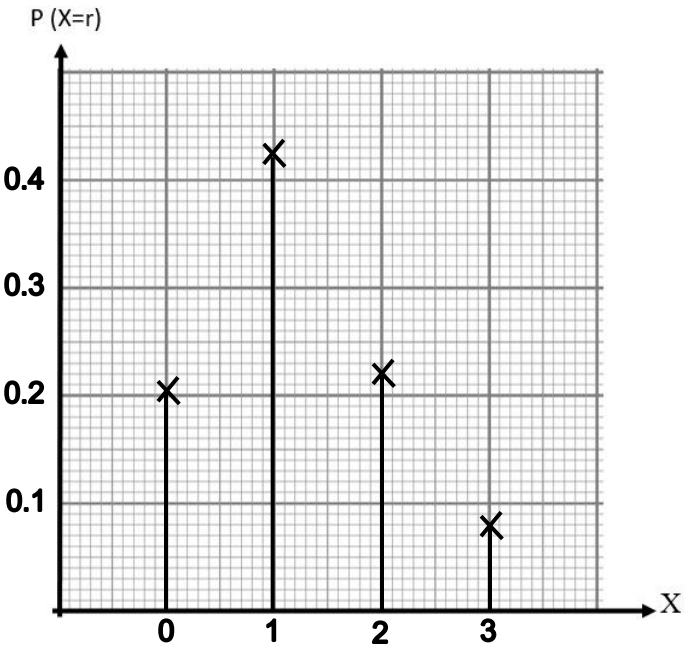
PERATURAN PEMARKAHAN
UJIAN DIAGNOSTIK 3 TINGKATAN 5
Kertas 1

No.	Skema Pemarkahan	Sub Markah	Jumlah Markah
1. (a) (b)	$h - 3 = 0$ or $k + 2 = 0$ $h = 3$ dan $k = -2$ $\sqrt{15^2 + (5-k)^2} = 17\ unit$ $(\boldsymbol{k-13})(\boldsymbol{k+3}) = \boldsymbol{0}$ $k = 13, k = -3$	1 1 1 1 1	 5
2. (a) (b) (c)	$\frac{x}{3} - \frac{y}{6} = 1$ $P(3,0)$ $m = \frac{0(5) + 12(1)}{1+5}$ $m = 2$ Lihat $m = -\frac{-6}{3}$ atau y = 2x -16 dan $m = -\frac{1}{2}$	1 1 1 1 1	 5
3. (a) (i) (ii)	 Lukis graf $f(x)$ Lukis graf $f^{-1}(x)$ Domain $f^{-1}(x)$: $-3 \le x \le 6$	 1 1 1	

(b)	$f^{-1}(x) = 2 - \frac{1}{x}$ atau $f^{-1}(x) = \frac{2x-1}{x}$ atau $f^{-1}(m) = \frac{2m-1}{m}$ $(2m - 3)(m - 1) = 0$ $m = \frac{3}{2}$, $m = 1$	1 1 1	6
4. (a)	$(x-7)(x-1) = 0$ $x = 7, x = 1$ $h = 7$ dan $k = 1$	1 1	
(b)	$h + 3 = 7 + 3 = 10$ or $2k - 1 = 2(1) - 1 = 1$ SOR = 11 dan POR = 10 atau $(x - 10)(x - 1) = 0$ $x^2 - 11x + 10 = 0$	1 1 1	5
5. (a)	$\frac{\ln 254}{\ln 6}$ 3.090	1 1	
(b)	$\log_3 16 + \log_3 n^2$ $\frac{\log_n 16}{\log_n 3} + 2\left(\frac{\log_n n}{\log_n 3}\right)$ $\frac{4p+2}{q}$	1 1 1	5
6. (a)	$5M + N = 2^2$ atau $11M + N = 4^2$ dan selesaikan $M = 2$ dan $N = -6$	1 1	
(b)	 Kedua-dua paksi dilabel dengan betul (y^2 melawan x) Garis lurus kecerunan positif dan c = -6	1 1	4
7.	$30k + 50s + 65b = 2400$ ……(1) $20k + 30s + 35b = 1400$…….(2) $K = 2s$……..(3) $30(2s) + 50s + 65b = 2400$ ** menghapuskan satu pembolehubah $28s = 280$ ** menghapuskan dua pembolehubah	1 1 1	6

<table>
<tr><td></td><td>$s = 10$, $k = 20$, $b = 20$</td><td>1, 1, 1</td><td></td></tr>
<tr><td>8.
(a)</td><td>$\frac{dy}{dx} = \frac{2}{5}x\left[-3(8-x)^2\right] + (8-x)^3\left(\frac{2}{5}\right)$
$\frac{2}{5}(8-x)^2(8-4x) = 0$
$x = 8$, $x = 2$
$M(2, \frac{864}{5}) / (2, 172.8)$ dan $N(8, 0)$</td><td>1
1
1
1</td><td></td></tr>
<tr><td>(b)</td><td>
<table>
<tr><td>x</td><td>*7</td><td>8</td><td>*10</td></tr>
<tr><td>$\frac{dy}{dx}$</td><td>- 8</td><td>0</td><td>$\frac{-256}{5} / -51\frac{1}{5}$</td></tr>
<tr><td>Tanda bagi $\frac{dy}{dx}$</td><td>-ve</td><td>0</td><td>-ve</td></tr>
<tr><td>Lakaran Tangen</td><td>\</td><td>–</td><td>\</td></tr>
<tr><td>Lakaran Graf</td><td colspan="3">  </td></tr>
</table>

$N(8,0)$ ialah titik lengkok balas.</td><td>1
1
1</td><td>7</td></tr>
<tr><td>9.
(a)</td><td>0.42</td><td>1</td><td></td></tr>
<tr><td>(b)</td><td>${}^3C_2(0.42)^2(0.58)^1$ atau ${}^3C_3(0.42)^3(0.58)^0$
0.31 dan 0.07</td><td>1
1</td><td></td></tr>
</table>

(c)	 Skala pada paksi - X dan paksi - P ($X = r$) seragam dan satu garis tegak dilukis betul. 4 garis tegak dengan ukuran tepat	1 1	5
10. (a) (b)	$(4\times 7)-\int_h^4 f(x)dx = 22$ 6 $\theta = 6t-\frac{1}{2}\left(\frac{t^{1+1}}{1+1}\right)+c$ $4 = 6(6)-\frac{1}{4}(6)^2+c$ $\theta = 6t-\frac{1}{4}t^2-23$	1 1 1 1 1	5
11. (a) (b) (i) (ii)	$4! = 24$ $\frac{4!}{2!} = 12$ Tidak sama kerana perkataan ‘PARA’ mengandungi objek secaman iaitu A $7C_5 = 21$ $(4C_4 \times 3C_1)+(4C_3 \times 3C_2)$ 15	1 1 1 1 1 1	6

12. (a)	$kos\ \theta = \frac{3}{5}$ 0.9273	 1 1	
(b)	$\frac{1}{2}(18)^2(0.9273)$ atau $\frac{1}{2}(18)(\frac{3}{5}\times 18)\sin 53.13^o$ atau $\frac{1}{2}(\frac{4}{5}\times 18)(\frac{3}{5}\times 18)$ $\frac{1}{2}(18)^2(0.9273) - \frac{1}{2}(18)\left(\frac{3}{5}\times 18\right)\sin 0.9273$ 72.46	1 1 1	5
13. (a) (i)	$\frac{4}{5}$	1	
(ii)	$\left(\frac{4}{5}\right)\left(-\frac{24}{25}\right)+\left(\frac{3}{5}\right)\left(-\frac{7}{25}\right)$ $-\frac{117}{125}$	1 1	
(iii)	$\frac{4}{5} = 2\cos^2\frac{A}{2} - 1$ $\cos\frac{A}{2} = \frac{3}{\sqrt{10}}$ atau 0.9487	1 1	
(b)	(2 sin x + 1)(sin x – 2) = 0 sudut rujukan, α = 30° x = 210°, 330°	1 1	8
14. (a)	$\sqrt{16}$ adalah bukan surd kerana nilainya adalah integer.	1	
(b)	$3x - 5 = e^6$ x = 2.264 atau $x = \frac{\ln 6 + 5}{3}$	1 1	
(c)	$\sqrt{9^2 - 3^2}$ $\sqrt{(6+r)^2 - (6-r)^2}$ atau $\sqrt{(3+r)^2 - (3-r)^2}$ $\sqrt{(6+r)^2 - (6-r)^2} + \sqrt{(3+r)^2 - (3-r)^2} = \sqrt{72}$ $r(6+4\sqrt{2}) = 12$ atau $r(26 + 24\sqrt{2}) = 72$ $r = \frac{6}{3+2\sqrt{2}}$ terbukti	1 1 1 1 1	8

15. (a)	Syarikat A $\frac{24}{2}(2(90000)+(24-1)(340))$ 3286080.00 Syarikat B $\frac{93600(1.04^{24}-1)}{1.04-1}$ 3658131.75 Syarikat B kerana jumlah gaji yang ditawarkan lebih tinggi iaitu RM 3658131.75	1 1 1,1	
(b)	$7800(1.04)^{24-1}$ 19224.78 T_1 atau a = 19417.03 $19417.03(1.01)^{24-1}$ 24410.37	1 1 1 1 1	8
JUMLAH			80

PERATURAN PEMARKAHAN TAMAT