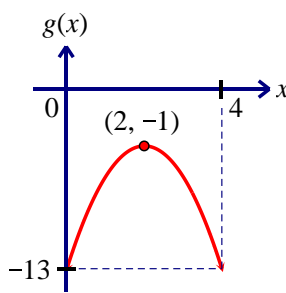
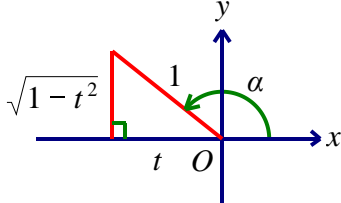


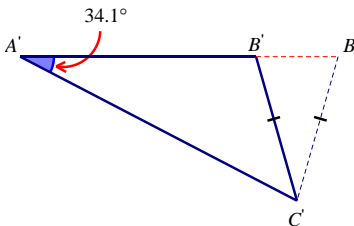
No.	Skema Pemarkahan	Markah	Sub Markah	Jumlah Markah
1(a)	Ketiga-tiga satah bersilang pada satu garis lurus.	1	1	5
(b)	$-2x + z = 3$	1	4	
	$(1 - k)x + z = 3$	1		
	$[-2 - (1 - k)]x = 0$ $k = 3$	1		
2(a)	$k = -1$	1	1	7
(b)		1	3	
	Bentuk \cap	1		
	Titik maksimum	1		
	Pintasan-y	1		
(c)(i)	Graf dengan bentuk yang sama bergerak secara menegak 5 unit ke bawah.	1	3	
(ii)	Persamaan paksi simetri masih sama, iaitu $x = 2$.	1		
(iii)	Nilai maksimumnya menjadi -6 .	1		
3(a)	Tulis hukum segi tiga vektor bagi $\Delta ABE @ \Delta ACD$.	1	3	9
(i)	$\vec{AE} = 7\underline{x} + 4\underline{y}$	1		
(ii)	$\vec{CD} = \frac{14}{3}\underline{x} - 8\underline{y}$	1		
(b)(i)	$7h\underline{x} + 4h\underline{y}$	1	2	
(ii)	$\frac{14}{3}k\underline{x} + (8 - 8k)\underline{y}$	1		
(c)	Banding *pekali bagi \underline{x} dan \underline{y} . Selesaikan *persamaan linear serentak melibatkan k dan h dengan menghapuskan satu anu.	1	4	
	$h = \frac{1}{2}$	1		
	$k = \frac{3}{4}$	1		
		1		

4 (a)	$\frac{r}{5} = \frac{h}{20} \text{ @ } r = \frac{1}{4}h$ $V = \frac{1}{3}\pi * \left(\frac{1}{4}h\right)^2 h$ $V = \frac{1}{48}\pi h^3 \text{ (tertunjuk)}$	1 1 1	3	
(b) (i)	$\frac{dV}{dh} = \frac{1}{16}\pi h^2 \text{ @ } \delta h = -0.01$ $\delta V = \frac{1}{16}\pi(5)^2 \times (-0.01)$ $-\frac{1}{64}\pi$	1 1 1		
(ii)	$\delta h = -\frac{p}{100}h \text{ @ } \delta V = -\frac{p}{1600}\pi h^3$ <p>Guna $\frac{\delta V}{V} \times 100\%$</p> $\left(\frac{-\frac{p}{1600}\pi h^3}{\frac{1}{48}\pi h^3}\right) \times 100\%$ $-3p\% \text{ (tertunjuk)}$	1 1 1	6	9
5 (a)	$20(4t + 2)^2 - 80(4t + 2) + 500$ $NT(t) = 320t^2 + 420$	1 1	2	
(b)	$320t^2 + 420 = 2000$ $t = \pm \sqrt{\frac{79}{16}}$ $t = 2.222$	1 1 1	3	5

6				
(a)	$3(n-1)^2 + 7(n-1)$ $3n^2 + n - 4$	1		
		1	2	
(b)	$3n^2 + 7n - (3n^2 + n - 4)$ $6n + 4$	1		
		1	2	
(c)	$T_1 = 6(1) + 4 = 10$ dan $T_2 = 6(2) + 4 = 16$ dan $T_3 = 6(3) + 4 = 22$ $d_1 = 16 - 10 = 6$ dan $d_2 = 22 - 16 = 6$ $d_1 = d_2 = 6$ janjang aritmetik.	1		
		1		
		1		
		1	4	8
7(a)		1		
(i)	$\sin \alpha = \sqrt{1-t^2}$ <u>Guna $\sin 2\alpha = 2 \sin \alpha \cos \alpha$</u> $-2t\sqrt{1-t^2}$			
		1		
		1		
		1		
(ii)	$\tan \frac{1}{2} \alpha = \frac{\sqrt{1-t^2}}{1-t}$	1	4	
(b)	Menggantikan $\sin 2A$ dengan $2 \sin A \cos A$ dan $\cos 2A$ dengan $1 - 2\sin^2 A$ $\frac{1}{\sin A} - 2 \sin A + 2 \sin A$ $\frac{1}{\sin A} = \text{kosek } A$	1		
		1		
		1	3	7

8 (a)	<table border="1" data-bbox="256 208 1125 286"> <tr> <td>$x + 1$</td> <td>2</td> <td>3</td> <td>5</td> <td>7</td> <td>9</td> <td>10</td> </tr> <tr> <td>$\log_{10} y$</td> <td>0.84</td> <td>0.99</td> <td>1.29</td> <td>1.57</td> <td>1.87</td> <td>2</td> </tr> </table> <p data-bbox="256 331 1125 443">Graf garis lurus $\log_{10} y$ melawan $(x + 1)$ dilukis Paksi betul dan seragam Sekurang-kurangnya satu titik di plot</p> <p data-bbox="256 477 1125 521">6 titik diplot dengan betul</p> <p data-bbox="256 555 1125 622">Garis lurus penyuaian terbaik [sekurang-kurangnya 5 * titik diplot]</p>	$x + 1$	2	3	5	7	9	10	$\log_{10} y$	0.84	0.99	1.29	1.57	1.87	2	1 1 1 1	5	
$x + 1$	2	3	5	7	9	10												
$\log_{10} y$	0.84	0.99	1.29	1.57	1.87	2												
(b)	$\log_{10} y = (x + 1) \log_{10} n + \log_{10} m$ <p data-bbox="256 768 1125 813">Cari *kecerunan = $x + 1$ @ *$c = \log_{10} m$</p>	1 1																
(i)	$m = 3.802$	1																
(ii)	$n = 1.505$	1																
(iii)	$x = 6.9$	1	5	10														
9(a)	<p data-bbox="256 1104 1125 1149">(i) 8</p> <p data-bbox="256 1171 1125 1283">(ii) $5(2x + 8) = x + 22$ $G(-2, 4)$</p> <p data-bbox="256 1317 1125 1619">(iii) $F(-4, 0)$ Use rumus luas segi tiga $\frac{1}{2} [(8)(4) + (-2)(0) + (-4)(6)] - [(6)(-2) + (4)(-4) + (0)(8)]$ 18</p>	1 1 1 1	6															
(b)	<p data-bbox="256 1664 1125 1709">Titik tengah EF ialah $(2, 3)$</p> <p data-bbox="256 1731 1125 1776">$\sqrt{(x - 8)^2 + (y - 6)^2}$ @ $\sqrt{(x - 2)^2 + (y - 3)^2}$</p> <p data-bbox="256 1821 1125 1865">$\sqrt{(x - 8)^2 + (y - 6)^2} = \sqrt{(x - 2)^2 + (y - 3)^2}$</p> <p data-bbox="256 1899 1125 1944">$4x + 2y - 29 = 0$</p>	1 1 1	4	10														

10 (a)	$\frac{dy}{dx} = \frac{1}{2\sqrt{x-5}} \text{ dan } \frac{dy}{dx} = \frac{1}{2}$ $y - 1 = \frac{1}{2}(x - 6)$ $y = \frac{1}{2}x - 2$	1 1 1	3	
(b)	$Q(4, 0)$	1	1	
(c)	$\frac{(x-5)^{\frac{3}{2}}}{\frac{3}{2}(1)} @ \frac{1}{2}(2)(1)$ $\frac{1}{2}(2)(1) - \left[\left(\frac{(6-5)^{\frac{3}{2}}}{\frac{3}{2}} \right) - \left(\frac{(5-5)^{\frac{3}{2}}}{\frac{3}{2}} \right) \right]$ $\frac{1}{3}$	1 1 1	3	
(d)	$\pi \int_5^6 (x-5) dx$ $\pi \left[\frac{x^2}{2} - 5x \right]_5^6$ $\pi \left[\left(\frac{6^2}{2} - 5(6) \right) - \left(\frac{5^2}{2} - 5(5) \right) \right]$ $\frac{1}{2}\pi$	1 1 1	3	10
11(a) (i)	${}^n C_0 \times (0.05)^0 \times (0.95)^n > 0.55$ $n \log_{10} (0.95) > \log_{10} 0.55$ $n < 11.66$ $n = 11$	1 1 1		

(ii)	$1 - P(X = 0) - P(X = 1)$ $1 - {}^{11}C_0 \times (0.05)^0 (0.95)^{11} - {}^{11}C_1 \times (0.05)^1 (0.95)^{10}$ 0.1019	1		
		1	5	
(b) (i)	$P\left(Z > \frac{1.5 - \mu}{\sigma}\right) = 0.95 \quad @ \quad P\left(Z > \frac{1.8 - \mu}{\sigma}\right) = 0.15$ $\frac{1.5 - \mu}{\sigma} = -1.645 \quad @ \quad \frac{1.8 - \mu}{\sigma} = 1.036$ $\mu = 1.6841$ $\sigma = 0.1119$	1		
		1		
		1		
(ii)	$0.95 - 0.15 = 0.8$ 0.8×2000 1600	1	5	10
12(a) (i)	$\angle ACB = 78.52^\circ \quad @ \quad \angle ABC = 67.38^\circ$ $DE^2 = 2.6^2 + 2.4^2 - 2(2.6)(2.4)\cos 78.52^\circ$ $DE = 3.168$	1		
		1		
		1		
(ii)	$\frac{BC}{\sin 34.1^\circ} = \frac{7.2}{\sin 67.38^\circ}$ $EB = 1.973$	1	5	
		1		
(b)	$\frac{1}{2}(2.6)(2.4)\sin 78.52^\circ$ $\frac{1}{2}(7.2)(4.373)\sin 78.52^\circ$ $\frac{1}{2}(7.2)(4.373)\sin 78.52^\circ - 2\left[\frac{1}{2}(2.6)(2.4)\sin 78.52^\circ\right]$ 9.313	1		
		1		
		1	4	
(c)	 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Nota:</p> <ol style="list-style-type: none"> 1. $\angle A'C'B'$ adalah tirus 2. Sisi-sisi dilakar dengan pembaris </div>	1		
			1	10

13				
(a)	<u>Gantikan $t = 2$ dalam v</u> $v = -(2^2) + 4(2) - 3$ 1 m s^{-1}	1		
		1	2	
(b)	$a = -2(0) + 4$ 4 m s^{-2}	1		
		1	2	
(c)	$-t^2 + 4t - 3 = 0$ $t_1 = 1$ $t_2 = 3$	1		
		1		
		1	3	
(d)	<u>Kamirkan v terhadap t</u> $s = -\frac{1}{3}t^3 + 2t^2 - 3t$ <u>Gantikan $t = 3$ dan $t = 1$ ke dalam s</u> $\left(-\frac{3^3}{3} + 2(3^2) - 3(3)\right) - \left(-\frac{1^3}{3} + 2(1^2) - 3(1)\right)$ $1\frac{1}{3} \text{ m}$	1		
		1		
		1	3	10
14(a)				
(i)	$\frac{15.60}{15} \times 100 @ \frac{P_{2022}}{15} \times 100 = 110$ $m = 104$	1		
		1		
(ii)	$P_{2022} = 16.50$	1	3	
(b)	$\frac{105(4) + 106(h) + 110(6)}{4 + h + 6}$	1		
(i)	$\frac{105(4) + 106(h) + 110(6)}{4 + h + 6} = 106.8$ 15	1		
		1		
(ii)	$\frac{58.20}{P_{2020}} \times 100 = 106.8$ 54.49	1		
		1	5	
(c)	$\frac{120}{106} \times 100$ 113.21	1		
		1	2	10

15				
(a)	$x + y \leq 90$	1		
	$y - x \leq 30$	1		
	$x < 3y @ y > \frac{1}{3}x$	1	3	
(b)	Lukis dengan betul sekurang-kurangnya satu garis lurus dari *ketaksamaan yang melibatkan x dan y .	1		
	Lukis dengan betul semua *garis lurus dan *ketaksamaan yang melibatkan x dan/atau y . [Terima garis putus-putus dan padu]	1		
	Rantau dilorek dengan betul	1	3	
(c)(i)	67	1		
(ii)	$k = 1.5x + 3y$	1		
	(30, 60) diperoleh daripada lukisan fungsi objektif, k .	1		
	RM225	1	4	10

