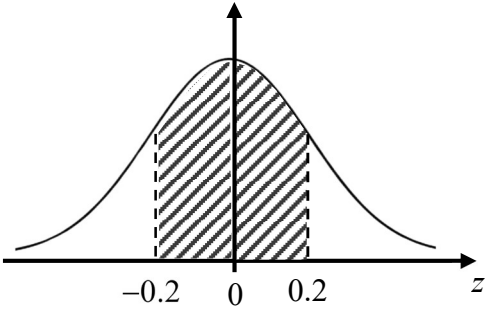


Panduan Penskoran Matematik Tambahan Kertas 1 (3472/1)
SPMRSM 2024

No	Skema Markah	Sub Markah	Markah
1(a)	$-\frac{7}{2}$	1	3
1(b)	5 $1 \leq g(x) \leq 2$	1 1	
2(a)	$5^x(5^{2y})$ ab^2	1 1	5
2(b)	$2^{-1+r+2+s-1} = 2^{2r+4}$ $2^{r+s} = 2^{2r+4}$ $r = s - 4$	1 1 1	
3(a)	$\log_b b + 5\log_b c = -9$ -2	1 1	5
3(b)(i) (ii)	30 $n > \frac{\log \frac{1}{30}}{\log 0.9}$ $n = 33$	1 1 1	

4(a)	$\int h(x)dx = 4(x-5)^3 @ \left[4(x-5)^3 \right]_0^4$ $\left[4(4-5)^3 - 4(0-5)^3 \right]$ 496	1 1 1	6
4(b)	$4\pi = (8)^2 \pi \times \frac{dh}{dt}$ $\frac{\pi(8)^2(12.5)}{\frac{\pi(10)^2}{\left(\frac{1}{16}\right)}}$ $t > 128$	1 1 1	
5	$\frac{y}{x^2} = ax + 4$ $b = 4$ $a = \frac{8 - *4}{12 - 0} @ 8 = 12(a) + 4$ $a = \frac{1}{3}$	1 1 1 1	4
6(a)	$\frac{s}{\theta} = \frac{2\pi r}{2\pi}$ $s = r\theta$	1 1	7

6(b)	0.9273 @ 1.855 $A_1 = \frac{1}{2}(20)^2 (2(3.142) - *1.855) @$ $A_2 = \frac{1}{2}(20)^2 (*1.855) @ A_6 = \frac{1}{2}(20)^2 2(3.142)$ $A_3 = \frac{1}{2}(20)^2 (\sin *106.26) \text{ atau } \frac{1}{2} \times 32 \times *12$ $\text{atau } 2 \times \frac{1}{2} \times 16 \times *12 @$ $A_4 = \frac{1}{2}(16)(8 + 20) @$ $A_5 = 32 \times 8$ $*A_1 + 2 *A_4 - *A_2 @ \quad *A_1 + [*A_5 - (*A_2 - *A_3)]$ 962.78 $\leftrightarrow$ 962.96	1 1 1 1 1	
7(a)	68 @ 68.26	1	
7(b)	 0.4207 0.1586	1 1 1	4

8(a)	$t + 6t + 12t + 8t = 1$	1	5
	$\frac{1}{27}$	1	
8(b)	${}^3C_0 p^0 q^3 = * \left(\frac{1}{27} \right)$ atau ${}^3C_3 p^3 q^0 = 8 * \left(\frac{1}{27} \right)$ $\sqrt{630 * \left(\frac{2}{3} \right) * \left(\frac{1}{3} \right)}$ 11.83	1 1 1	
9(a)	$({}^8C_2 \times {}^{10}C_5)$ atau $({}^8C_4 \times {}^{10}C_3)$ atau $({}^8C_6 \times {}^{10}C_1)$ $({}^8C_2 \times {}^{10}C_5) + ({}^8C_4 \times {}^{10}C_3) + ({}^8C_6 \times {}^{10}C_1)$ 15 736	1 1 1	7
9(b)(i)	$7! = 5040$	1	
9(b)(ii)	${}^1P_1 \times {}^3P_3 \times 1 \times {}^2P_2$ ${}^1P_1 \times {}^3P_3 \times 1 \times {}^2P_2 \times 2 \times 3$ 72	1 1 1	
10	$114 - 36\sqrt{2} = (6 - \sqrt{2}) \times \text{panjang atau setara}$ $\frac{114 - 36\sqrt{2}}{6 - \sqrt{2}} \times \frac{6 + \sqrt{2}}{6 + \sqrt{2}}$ $\frac{684 + 114\sqrt{2} - 216\sqrt{2} - 72}{36 - 2}$ $18 - 3\sqrt{2}$ 3:1	1 1 1 1 1	5



11(a)(i)	$8 - 3n$	1	9
(ii)	$T_n + T_{n+1} = -23 @ T_{n-1} + T_n = -23$	1	
	$8 - 3(6) @ 8 - 3(7)$	1	
	$-10, -13$ kedua ² nya	1	
11(b)(i)	$\frac{20}{2}(1+20) @ \frac{20}{2}[2(1)+(20-1)1]$	1	
	210	1	
11(b)(ii)	$[a=]1, [d=]2$	1	
	$\frac{210}{2}[2(1)+(210-1)(2)]$	1	
	44 100	1	
12(a)	$0 < k \leq 1$	1	
12(b)	$\frac{ai + bj}{\frac{2}{5}} \text{ atau } \overrightarrow{OP} = \frac{2}{5}$	1	4
	$2 * \left(\frac{2}{5}\right)$	1	
	$\frac{4}{5}$	1	

14(a)	$x^2 + mx + m - 1 = 0$ $(m)^2 - 4(1)(m - 1) = 0$ 2	1 1 1	
14(b)(i)	$-\frac{1}{2}\left[t^2 - 8t + \left(\frac{-8}{2}\right)^2 - \left(\frac{-8}{2}\right)^2\right]$ $-\frac{1}{2}(t-4)^2 + 8$ 14	1 1 1	
14(b)(ii)	Kes $(t-1)(t-3) \leq 0$ titik ujian 0 titik ujian 2 titik ujian 4 $(*0-1)(*0-3) \geq 0 \quad \quad (*2-1)(*2-3) \leq 0 \quad \quad (*4-1)(*4-3) \geq 0$ $\begin{array}{ccccccc} & + & & - & & + & \\ \leftarrow & & & & & & \rightarrow t \\ & t \leq 1 & 1 & 1 \leq t \leq 3 & 3 & t \geq 3 & \end{array}$ @ Kes $(-t+1)(t-3) \geq 0$ titik ujian 0 titik ujian 2 titik ujian 4 $(*0+1)(*0-3) \geq 0 \quad (*-2+1)(*2-3) \leq 0 \quad (*-4+1)(*4-3) \geq 0$ $\begin{array}{ccccccc} & - & & + & & - & \\ \leftarrow & & & & & & \rightarrow t \\ & t \leq 1 & 1 & 1 \leq t \leq 3 & 3 & t \geq 3 & \end{array}$ Titik ujian mesti memenuhi semua ketaksamaan $1 \leq t \leq 3$	2	8

15(a)	$Q(0, 6)$ $\frac{1}{2} \left [(0)(6) + (-3)(h) + (5)(-5) + (-5)(6)] - [(6)(h) + (6)(5) + (-3)(-5) + (-5)(0)] \right = 68$ $-9h - 100 = 136$ DAN $-9h - 100 = -136$ $h = 4$	1 1 1 1	8
15(b)	$\sqrt{(x - (-5))^2 + (y - (-5))^2} = 2y$ $x^2 - 3y^2 + 10x + 10y + 50 = 0$ $(-5)^2 - 3(5)^2 + 10(-5) + 10(5) + 50 = 0$ $0 = 0$ DAN melalui $(-5, 5)$ atau setara	1 1 1 1	