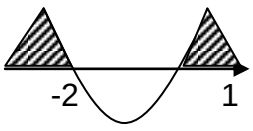
SKEMA PEMARKAHAN
PEPERIKSAAN PERCUBAAN SPM 2017 KM6/10 PPDU

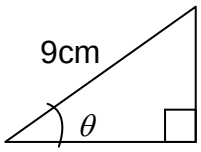
MATEMATIK TAMBAHAN
KERTAS 1

No Soalan	Skema Pemarkahan	Markah
1	Fatimah Sebab nilai sisihan piawai lebih kecil	1 1 [2m]
2	$\frac{1}{4} \times \frac{1}{4}$ $= \frac{1}{16}$	1 1 [2m]
3	4P3 $= \frac{4!}{(4-3)!}$ = 4.3.2 = 24	1 1 1 [3m]
4	(a) 8p = 2 p = ¼ (b) P(X ≥ 1) = 1 – P(X = 0) = 1 – $^8C_0$ (¼)^0 (¾)^8 = 1 – 0.1 = 0.90	1 1 1 1 [4m]
5	$\int_1^3 (3x-5)^{-2}\,dx$ $= \left[\frac{(3x-5)^{-1}}{-1(3)}\right]_1^3$ $= \left[\frac{1}{-3(3x-5)}\right]_1^3$	1

	$\left[\frac{1}{-3(3(3)-5)}\right]-\left[\frac{1}{-3(3(1)-5)}\right]$ = - ¼	1 1 [3m]
6	$\frac{dy}{dx}=-\frac{3}{x^2}-2$ $\frac{dy}{dt}=\frac{dy}{dx}\times\frac{dx}{dt}$ $5=(-\frac{3}{x^2}-2)\times\frac{dx}{dt}$ $5=(-\frac{3}{1^2}-2)\times\frac{dx}{dt}$ $\frac{dy}{dx}=-1\,unit$	1 1 1 [3m]
7	$y = 2x^2 + ax + b$ $\frac{dy}{dx}$ = 4x + a (1, 5) : 4(1) + a = 8 a = 4 5 = 2(1)2 + 4(1) + b b = -1	 1 1 1 1 [4m]
8	$m_1 = k$ $m_2 = 2(m – 5)$ k = 2(m – 5) $m=\frac{k+10}{2}$	 1 1 [2m]

9	Luas PQRS = $\frac{1}{2}\begin{vmatrix} 0 & 1 & 2 & 3 & 0 \\ 1 & 4 & 7 & 10 & 1 \end{vmatrix}$ = 0 Maka P, Q, R, S adalah segaris	1 1 1 [3m]
10	$\sqrt{3^2 + (1-k)^2} = 5$ k = -3 , 5	1 , 1 1 [3m]
11	(a) 2x + k = y $x = \frac{y-k}{2}$ $f(x) = \frac{2-k}{2}$ (b) f(5) = 2k 2(5) + k = 2k k = 10	1 1 1 1 [4 m]
12	p = 3 g(p) = q 3p – 5 = q 3(3) – 5 = q q = 4	1 1 1 [3m]
13	(a) h = 9 (b) { 1, 4, 9,16 } (c) $f : x \to x^2$	1 1 1 [3m]

14	$\log_5\left(\frac{3}{10}\times\frac{4}{5}\div\frac{2}{5}\right)$ $= \log_5\left(\frac{3}{5}\right)$ $= \log_5 3 - \log_5 5$ = 0.682 – 1 = - 0.318	1 1 1 1 [4m]
15	$2^n = p$ $2^{n+3} - 2^n$ $= 2^n \times 2^3 - 2n$ = 8p – p = 7p	1 1 1 [3m]
16	log y = log a + (k – 1) log x k – 1 = 3 k = 4 $\log_{10}$ a = 2 a = 100	1 1 1 [3m]
17	$2x^2 + \sqrt{p}x + 1 - q = 0$ $b^2 - 4ac = 0$ $(\sqrt{b})^2 - 4(2)(1-q) = 0$ $q = \frac{8-p}{8}$	1 1 1 [3m]
18	$x^2 + x - 2 > 0$  x < -2 , x > 1	1 1 1 [3m]

19	 (a) $\sin\theta = \frac{3}{9} = \frac{1}{3}$ $\theta = 0.3398$ rad $\angle AOB = 2 \times 0.3398 = 0.6796 rad$ (b) AB = 9 (0.6796) = 6.116 cm	 1 1 1 1 [4m]
20	$7\sin x + 3[1 - 2\sin^2 x] = 0$ $6\sin^2 x - 7\sin x - 3 = 0$ $\sin x = \frac{3}{2} \Rightarrow$ x tidak tertakrif $\sin x = -\frac{1}{3} \Rightarrow x = 199.47^0, \quad 340.53^0$	1 1 1 [3m]
21	3x -2 – 8 = 18 – (3x – 2) x = 5 8, 13 , 18 d = 5 T5 = a + 4d = 8 + 4(5) = 28	 1 1 1 [3m]

22	0.2727..... = 0.27 + 0.0027 + 0.000027 + ... = $\frac{0.27}{1-1.01}$ = $\frac{22}{99}=\frac{3}{11}$ k = 3 , m + 2 = 11 m = 9	 1 1 1 1 [4m]
23	120 saat , 114 saat , 108 saat d = -6 (a) T6 = a + 5d = 120 + 5(-6) = 90 (b) S6 = 6/2 [2(120) + 5(-6)] = 630 s = 10.5 min	 1 1 1 1 [4m]
24	(a) $\frac{\times -1.7}{0.4}=-0.2$ X = 1.62 kg (b) P(X > 1.5) = P(z > - 0.5) = 0.6915 = 69.15 %	 1 1 1 [3m]
25	(a) $^{8}C_{4}$ x $^{5}C_{2}$ = 70 x 10 = 700 (b) 0P6L + 1P5L + 2P4L = $^{5}C_{0}$ x $^{8}C_{6}$ + $^{5}C_{1}$ x $^{8}C_{5}$ + $^{5}C_{2}$ x $^{8}C_{4}$ = 28 + 280 + 700 = 1008	1 1 1 1 [4m]