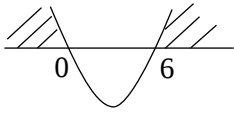


SKEMA PEMARKAHAN
MATEMATIK TAMBAHAN
KERTAS 1

MODUL INTERVENSI PDPR TINGKATAN 4 2021

Soalan	Skema Pemarkahan	Sub Markah	Markah Penuh
1	(a) $f(x) = 3x - 1$, $g(x) = \frac{3x}{x+1}$ $fg(x) = 3\left(\frac{3x}{x+1}\right) - 1$ $= \frac{9x}{x+1} - 1$ $= \frac{9x - x - 1}{x+1}$ $= \frac{8x - 1}{x+1} \text{ atau/or}$ $gf(x) = \frac{3(3x - 1)}{3x - 1 + 1}$ $= \frac{9x - 3}{3x}$ $fg(x) = gf(x)$ $\frac{8x - 1}{x+1} = \frac{9x - 3}{3x}$ $15x^2 - 9x + 3 = 0$ $3[5x^2 - 3x + 1] = 0$ $(10x - 3)^2 = 0$ $x = \frac{3}{10}$ (b) $g(x) = x - 3$ $g^2 = gg(x)$ $= x - 3 - 3$ $g^2(x) = x - 6$ $g^3 = gg^2(x)$ $= x - 6 - 3$ $= x - 9$ $\therefore g^n(x) = x - 3n$	1 1 1 1 1 1	6

2	(a) $y = -\frac{k}{4}x + 12$ $k = -3$ (b) $m = -\frac{4}{3}$ $y - 2 = -\frac{4}{3}(x + 3)$ $y = -\frac{4}{3}x - 2$	1 1 1 1 1	5
3	(a) $x^2 - 4x + k + 6 = 0$ $(-4)^2 - 4(1)(k + 6) = 0$ $k = -2$ (b) $-\left[x^2 - 2x + \left(-\frac{2}{2}\right)^2 - \left(-\frac{2}{2}\right)^2 - 15\right]$ $-(x - 1)^2 + 16$ $h = 1$ dan/and $k = 16$	1 1 1 1 1 1	6
4	(a) $22 = 4a - 2$ atau $12 = \frac{12}{2-b}$ $a = 6$ $b = 1$ (b) $\frac{12}{(6x-2)-1}$ $\frac{4}{2x-1}$	1 1 1 1 1	5
5	(a) $(x - 2)(3x - 1) = 0$ $x = 2, x = \frac{1}{3}$ (b) $n^2 - 4(m)(4) = 0$ $m = \frac{n^2}{16}$	1 1 1 1	4
6	(a) $M(0, -8)$ (b) $-\left(x - \frac{h}{2}\right)^2 + \frac{h^2}{4} - 8$ $\frac{h}{2} = 3$ atau $\frac{6^2}{4} - 8 = k$ $h = 6$ dan $k = 1$	1 1 1 1	

	(c) $-x^2 + hx - 8 \leq -8$ $x(x - 6) \geq 0$ atau  $x \leq 0, x \geq 6$	1 1 1	7
7	(a) $5 + (n - 1)3 = 131$ $n = 43$ (b) $r = -\frac{2}{9}$ $\frac{4}{1 - \left(-\frac{2}{9}\right)}$ $\frac{36}{11}$	1 1 1 1	5
8	(a) $T_{12} = 1500 + 11(200)$ 3700 (b) $a = 18\,000$ atau $d = 2400$ $S_5 = \frac{5}{2} [2(18\,000) + 4(2400)]$ 114 000	1 1 1 1	5
9	$\frac{120 \times 125}{x} = 100$ $x = 150$ (Indeks harga) $\frac{y}{400} \times 100 = 150$ $y = \text{RM } 600$ (harga perabot tahun 2021)	1 1 1	4
10	(a) $PR^2 = 5.2^2 + 4.3^2 - 2(5.2)(4.3) \cos 58^\circ$ $PR = 4.67$ (b) Luas $PQR = \frac{1}{2} (5.2)(4.3) \sin 58^\circ$ Luas $PRS = \frac{1}{2} (4.67)(9.6) \sin 51.34^\circ$	1 1 1	

	$\frac{1}{2} (5.2) (4.3) \sin 58^\circ + \frac{1}{2} (4.67) (9.6) \sin 51.34^\circ$ 22.981	1	
		1	6
11	(a) $\frac{x}{12} - \frac{y}{3} = 1$ (b) $E(x, y) = \left(\frac{2(0) + 1(12)}{3}, \frac{2(-3) + 1(0)}{3} \right)$ $E(4, -2)$ (c) $m_{AB} = -\frac{12}{(-3)}$ atau/ or $m_{ST} = -4$ $y + 2 = -4(x - 4)$ atau/ or $-2 = -4(4) + c$ $y = -4x + 14$ Pintasan-$y = 14$	1 1 1 1 1 1 1	7
12	$s = 24$ Tersurat atau tersirat/<i>Seen or implied</i> atau/ or $21^2 = 10^2 + 17^2 - 2(10)(17) \cos \angle BAD$ atau/ or $10^2 = 21^2 + 17^2 - 2(21)(17) \cos \angle ADB$ atau/ or $17^2 = 10^2 + 21^2 - 2(10)(21) \cos \angle ABD$ (Terima sebarang simbol bagi sudut/<i>Accept any symbol for angle</i>) $\sqrt{24(24-10)(24-17)(24-21)}$ atau/ or $\frac{1}{2} (10)(17) \sin 98.80^\circ$ atau/ or $\frac{1}{2} (10)(21) \sin 53.13^\circ$ atau/ or $\frac{1}{2} (21)(17) \sin 28.07^\circ$ $\frac{1}{2} \times 21 \times h = 84$ $\therefore h = 8$	1 1 1 1	4
13	(a) 4 (b) $S_2 = 10$ $T_2 = S_2 - S_1 = 10 - 4 = 6$ $d = T_2 - T_1 = 6 - 4 = 2$ (c) $T_{10} = 4 + (10-1) (2)$ $= 22$ (d) $T_n = 4 + (n-1) (2)$ $T_n = 2n + 2$	1 1 1 1 1 1 1	8

14	(a) $\frac{6}{\sin 57^\circ} = \frac{BE}{\sin 95^\circ}$ $BE = 7.127$ (b) $\frac{3}{\sin \angle ABE} = \frac{7.127}{\sin 35^\circ}$ $\angle ABE = 13.97^\circ$ $\angle AEB = 131.03^\circ$ $\frac{1}{2} (3) (7.127) \sin 131.03^\circ$ 8.06 (c) $6^2 = 5^2 + 4^2 - 2(5)(4) \cos D$ $\angle EDC = 82.82^\circ$	1 1 1 1 1 1 1 1	8
15	(a) $\frac{a}{0.50} \times 100 = 160$ atau $\frac{1.80}{b} \times 100 = 150$ atau $\frac{1.30}{1.00} \times 100 = c$ $a = 0.8$ $b = 1.20$ $c = 130$ (b) $160(4) + 150(3) + 130(3)$ $\frac{160(4) + 150(3) + 130(3)}{10}$ 148	2,1,0 1 1 1 1 1 1	8

SKEMA PEMARKAHAN TAMAT