



**MAJLIS PENGETUA SEKOLAH MALAYSIA (MPSM)
CAWANGAN KELANTAN**

**PERCUBAAN SPM
2021**

**MATEMATIK
KERTAS 1**

UNTUK KEGUNAAN PEMERIKSA SAHAJA

**SKEMA
PEMARKAHAN**

SKEMA MATEMATIK 1449/1

1. D	11. C	21. C	31. C
2. D	12. D	22. D	32. D
3. D	13. B	23. A	33. B
4. C	14. B	24. D	34. B
5. C	15. C	25. B	35. A
6. A	16. A	26. B	36. A
7. C	17. D	27. B	37. A
8. D	18. A	28. A	38. D
9. A	19. B	29. B	39. C
10. C	20. C	30. C	40. C



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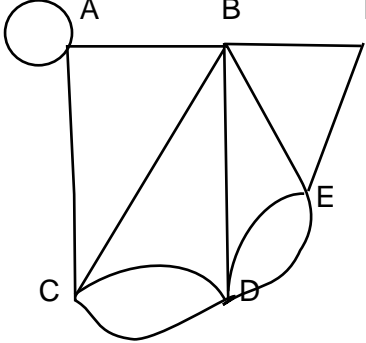
**PERCUBAAN SPM
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**MATEMATIK
KERTAS 2**

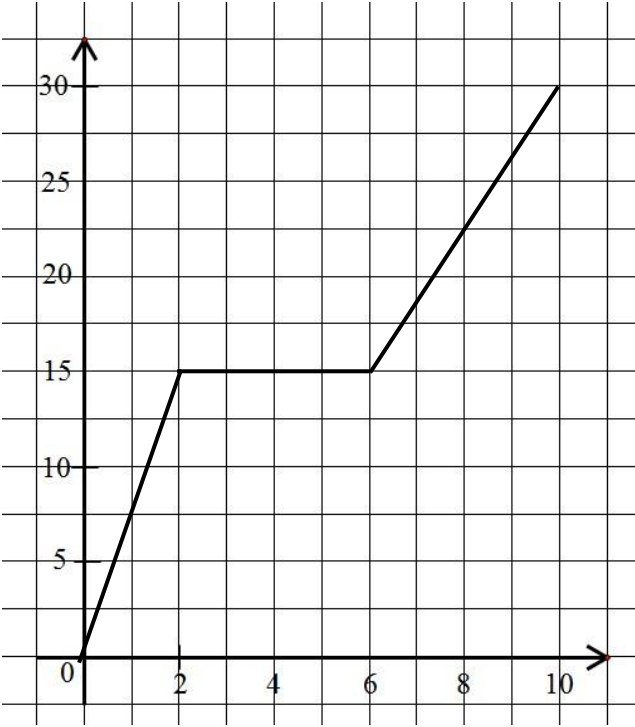
UNTUK KEGUNAAN PEMERIKSA SAHAJA

**SKEMA
PEMARKAHAN**

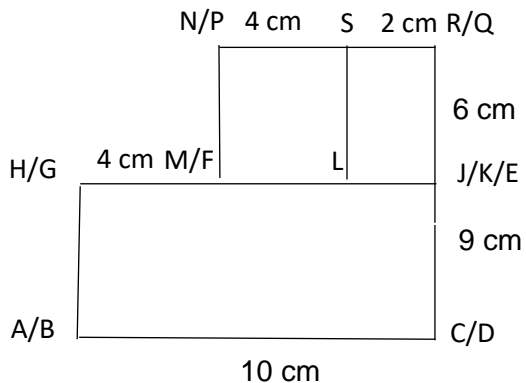
SOALAN	PECAHAN	PERATURAN	MARKAH	
1.		i) $y \geq x + 8$ ii) $y < 8$ iii) $x > -12$ iv) $y \geq 0$	P1 P1 P1 P1	4
2.		$15360 = k \times 80 \times 48$ $k = 4$ $A = 4 \times 80 \times 100$ $A = 32000$	K1 K1 K1 N1	4
3.		56 28 24 213_7	K1 K1 K1 N1	4
4.		$\frac{22}{7} \times 72^2 \text{ or } \frac{22}{7} \times 24^2$ $\frac{22}{7} \times 24^2 \times 7$ $\frac{22}{7} \times 72^2 - \frac{22}{7} \times 24^2 \times 7$ $\frac{25344}{7} \text{ or equivalent}$	K1 K1 K1 N1	4
5.	(a) (b)	Sah dan tidak munasabah a ialah nombor ganjil jika dan hanya jika a tidak boleh dibahagi tepat dengan 2 Jika a boleh dibahagi tepat dengan 2 maka, a bukan nombor ganjil	P2 P1 P1	4

6		$4(4r^2 \times 2s)$ or $2(2s \times 2s)$ $32r^2s + 8s^2$ $4(4)^2 \times 2(6) \times 2(6)$ 9216	P1 K1 K1 N1	4
7	(i) (ii) (iii) (iv)	RM 7 500 RM 2 150 RM 1 950 RM 1 650	K1 K1 K1 K1	4
8		 <p>Betul mana-mana 3 tepi K1</p> <p>NOTE : Terima mana-mana yang betul</p>	K1 K1 K1 K1	4
9		$22\,500 - 800$ atau $21\,700$ Quddus Insurans $\frac{80}{100} \times 21\,700$ atau $17\,360$ Encik Khairil $\frac{20}{100} \times 21\,700 + 800$ 5 140	K1 K1 K1 N1	4

10		$\cos 30^\circ = \frac{x}{8} \text{ atau } 6.93$ $\sin 45^\circ = \frac{x}{8} \text{ atau } 5.66$ $6.93 - 5.66$ 1.27	K1 K1 K1 N1	4
11	(a) (b) (c)	$\frac{k + k + 4 + k + 8 + 3k - 4 + 2k + 3 + k - 1 + 4k}{7} = 7$ $k = 3$ $11 - 3$ 8 $\sqrt{\frac{2^2 + 3^2 + 5^2 + 7^2 + 9^2 + 11^2 + 12^2}{7} - (7)^2}$ $= 3.59$	K2 N1 K1 N1 K2 N1	8
12	(a) (b) i)	$= \frac{1}{(9 \times (-6)) - (-8 \times 3)} \begin{pmatrix} -6 & -3 \\ 8 & 9 \end{pmatrix}$ $= -\frac{1}{30} \begin{pmatrix} -6 & -3 \\ 8 & 9 \end{pmatrix} \text{ atau } \begin{pmatrix} \frac{1}{5} & \frac{1}{10} \\ -\frac{4}{15} & -\frac{3}{10} \end{pmatrix}$ $\frac{90}{100} \times 8000 = 7200 *$ $8x + 6y = 5200$ $10x + 11y = 7200 \text{ atau}$ $\begin{pmatrix} 8 & 6 \\ 10 & 11 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 5200 \\ 7200 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{(8 \times 11) - (6 \times 10)} \begin{pmatrix} 11 & -6 \\ -10 & 8 \end{pmatrix} \begin{pmatrix} 5200 \\ 7200 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 500 \\ 200 \end{pmatrix} \text{ atau } x = 500, y = 200$	K1 N1 K1 P1 P1 K1 K1 N1 N1	9

<p>13</p>	<p>a)</p>		<p>P2</p>	
<p>14</p>	<p>(i)</p>	<p>Encik Fariss $79\,450 - 645 - 9000 - 2500 - 7000 - 3000$ $57\,305$ $1\,800 + \frac{14}{100} \times 7305 - 800 @ 2022.70$</p> <p>Isteri $56540 - 645 - 9000 - 2500 - 6969 - 2955$ 34471 $150 + \frac{3}{100} \times 14471 - 100 - 400 @ 84.13$</p> <p>Jumlah taksiran cukai berasingan $RM\ 2022.70 + RM\ 84.13$ $RM\ 2106.83$</p>	<p>K1</p> <p>K1</p> <p>K1</p> <p>K1</p> <p>K1</p> <p>N1</p>	<p>9</p>

	(ii)	<p>Bersama $135990 - 1290 - 9000 - 2500 - 7000 - 3000$ 113200 $10900 + \frac{24}{100} \times 13200 - 900$</p> <p>Jumlah taksiran cukai bersama RM13168</p> <p>Taksiran cukai berasingan lebih sesuai</p>	<p>K1</p> <p>K1</p> <p>N1</p> <p>P1</p>	10
15	<p>(a) i)</p> <p>ii)</p> <p>(b)</p>	<p>A = Pembesaran, $k = 2$, Pada Pusat (3, - 2) @ R'</p> <p>B = Putaran, 180° , Pada pusat (1,0)</p> <p>$Li = 2^2 \times 20$ $= 80$</p>	<p>P3</p> <p>P3</p> <p>K2</p> <p>N1</p>	9
16	<p>(a) i-</p> <p>ii-</p> <p>iii-</p> <p>(a) i-</p> <p>ii-</p> <p>(c) i-</p>	<p>$\left(\frac{2-6}{2}, \frac{4-2}{2} \right)$ $(-2, 1)$</p> <p>$\sqrt{(-6+2)^2 + (-2-1)^2}$ 5</p> <p>$5 = \sqrt{(2+2)^2 + (y-1)^2}$ $y^2 - 2y - 8 = 0$ $(y-4)(y+2) = 0$ $y = -2, y = 4$ Koordinat (2, - 2)</p> <p>$-\frac{3}{4}$</p> <p>$\frac{7-1}{x+2} = -\frac{3}{4}$ $x = -10$ $(-10, 7)$</p> <p>$\frac{3}{4}$ $7 = \frac{3}{4}(-10) + c$ $y = \frac{3}{4}x + \frac{29}{2}$</p>	<p>K1</p> <p>N1</p> <p>K1</p> <p>N1</p> <p>K1</p> <p>K1</p> <p>K1</p> <p>N1</p> <p>N1</p> <p>K1</p> <p>K1</p> <p>N1</p>	15

17	(a) i-	<p>$(30 \times 36 \times 27)$ or $\frac{22}{7} \times 14^2 \times t$</p> <p>$(30 \times 36 \times 27)$ or $\frac{22}{7} \times 14^2 \times t = 34998$</p> <p>$105840 + 2662t = 174986$</p> <p>$T = 9.48$</p>	K1	
	ii-	<p>$x^3 = \frac{22}{7} \times 14^2 \times 9.48$</p> <p>$x=18$</p>	K2	N1
	(b)		K1	
		<p>Correct shape with rectangle BCJH and MLNS</p> <p>Correct shape LSKR</p> <p>$BH > MN = NR = RK > LM = FG$</p> <p>Measurements correct to ± 0.2 cm (one way) and all angles at vertices = $90^\circ \pm 1^\circ$</p>	K1	K1
	(c) i-	<p>Kek 1 $\frac{7}{8}$</p> <p>kek 2 $\frac{1}{8}$</p>	K1	K1

		$\left(\frac{7}{8} \times \frac{1}{8}\right) + \left(\frac{1}{8} \times \frac{7}{8}\right) + \left(\frac{1}{8} \times \frac{1}{8}\right)$ $\frac{15}{64}$	K1 N1	15 ,
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