



**MODUL TOPIKAL**  
**SOALAN PERCUBAAN SPM 2023**

**TOPIK TINGKATAN 4**  
**BAB 1**

**FUNGSI**  
**(FUNCTION)**

**SUMBER SOALAN:**  
**SOALAN – SOALAN PERCUBAAN**

TERENGGANU  
NEGERI SEMBILAN  
KELANTAN  
SABAH  
SBP  
MELAKA  
SELANGOR (MODUL PINTAS-SET 1)  
PERAK

**SKEMA JAWAPAN**

**DISUSUN OLEH:**  
**PN. NOORUL HUDA BINTI MOHD HASHIM**  
(SMK TAMAN TASIK, TAIPING)

**PN ZAINAB BINTI ABD RAHMAN**  
(SMK CONVENT, TAIPING)

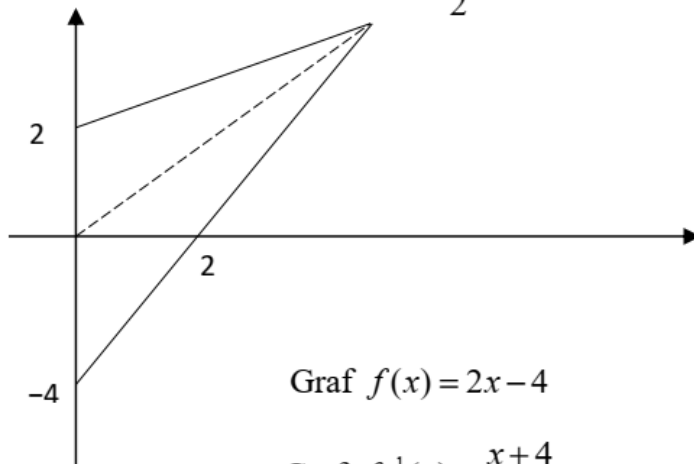
**SOALAN 1 : SOALAN PERCUBAAN SPM NEGERI TERENGGANU 2023 (KERTAS 1)**

2

(a)  $2y - 4 = x$  atau setara dan  $f^{-1}(x) = \frac{x+4}{2}$

N1

(b)



Graf  $f(x) = 2x - 4$

P1

Graf  $f^{-1}(x) = \frac{x+4}{2}$

P1

4

Graf bagi  $f^{-1}$  adalah pantulan bagi graf  $f$  pada garis lurus  $y = x$

ATAU setara.

N1

**SOALAN 2 : SOALAN PERCUBAAN SPM NEGERI TERENGGANU 2023 (KERTAS 2)**

1

(a) (i)  $gf(x) = 2\left(\frac{x}{p}\right) + 3$  ATAU  $f(x) = (2x+3) - 3$  atau setara

K1

Banding  $g^{-1}(x)$  ATAU  $f(x)$  atau setara

K1

$p = 2$

N1

(b) (i)  $f^2(x) = p(px)$  Ganti  $p = 2$

K1

$f^2(x) = 4x$

N1

(ii) Tulis  $f^3(x) = 9x$  atau  $f^4(x) = 16x$

K1

$f^n(x) = 2^n x$

N1

7

**SOALAN 3 : SOALAN PERCUBAAN SPM NEGERI SEMBILAN 2023 (KERTAS 1)**

2	(a)	-9	N1
	(b)	$\frac{\sqrt{m+9}}{3} = \pm \frac{1}{2}$	K1
		$-\frac{27}{4} // -6.75$	N1

**SOALAN 4 : SOALAN PERCUBAAN SPM NEGERI SEMBILAN 2023 (KERTAS 1)**

11	(a)	$f(x) = x - 380$	P1
		$g(x) = 0.25x$	P1
		$gf(x) = 0.25(x - 380)$	N1
	(b)	$0.25(x - 380) \geq 5500$	K1
		$22380 \div 373$	K1
		$x \geq 60$	K1
		60	N1

**SOALAN 5 : SOALAN PERCUBAAN SPM NEGERI KELANTAN 2023 (KERTAS 1)**

2	$5p - 4 = -19$ atau setara ATAU $ 5x - 4  = 0$	K1	
(a)	$p = -3$	N1	
	$q = \frac{4}{5}$	N1	
2	$-(5x - 4) = 4$ atau setara	K1	5
(b)	$-3 \leq x \leq 0$	N1	

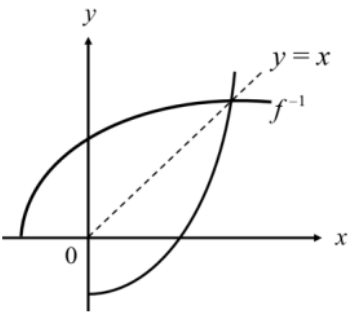
**SOALAN 6 : SOALAN PERCUBAAN SPM NEGERI KELANTAN 2023 (KERTAS 2)**

2 (a)	$f^2(x) = p^2x + pq + q$ atau $f^3(x) = p^3x + p^2q + pq + q$ $p = 2$ $q = 2$	K1 N1 N1	8
2 (b)	$f^{-1}(x) = \frac{x-2}{2}$ atau $2x+2 = -6$ $-4$	K1 N1	
2 (c)	$f^4(x) = 16x + 30$ $f^1(x) = 2x + 2$ $f^2(x) = 4x + 6$ $f^3(x) = 8x + 14$ $f^4(x) = 16x + 30$ $f^n(x) = 2^n x + 2^{n+1} - 2$	N1  K1  N1	

**SOALAN 7 : SOALAN PERCUBAAN SPM NEGERI SABAH 2023 (KERTAS 1)**

1	a) Banyak kepada satu	N1	3
	b) $0 \leq x \leq 3$ $2 \leq f(x) \leq 6$	N1 N1	

**SOALAN 8 : SOALAN PERCUBAAN SPM NEGERI SABAH 2023 (KERTAS 2)**

<b>1</b>	a)	 <p>Garis <math>y = x</math> dilukis                  Graf <math>f^{-1}</math> dilukis.</p>		<b>7</b>		
	b)				$x^2 - 6 = x$ OR $\sqrt{x+6} = x$ $(x-3)(x+2) = 0$ $(3, 3)$	K1 K1 N1
	c)				$[g(x)]^2 - 6 = x^2 + 2x - 5$ atau $(x+1)^2 - 6$ $g(x) = x + 1$	K1 N1

**SOALAN 9 : SOALAN PERCUBAAN SPM SBP 2023 (KERTAS 1)**

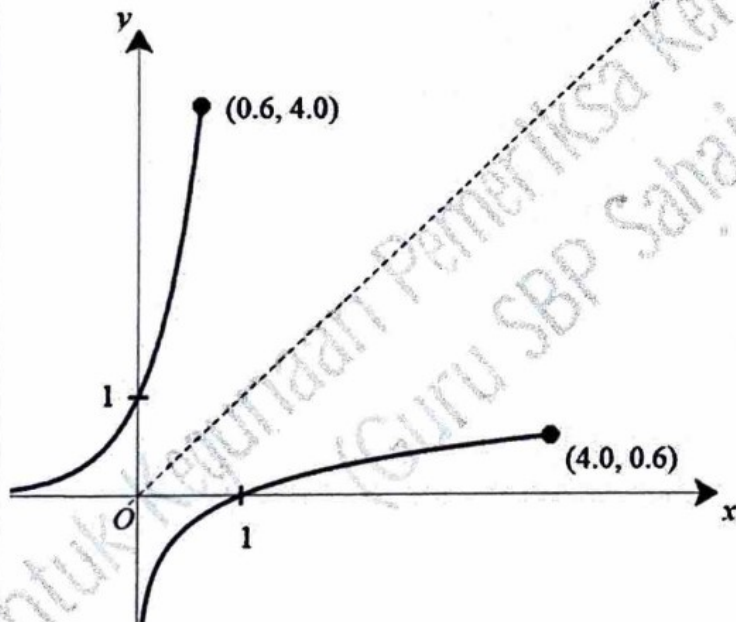
<b>5(a)(i)</b>	$k = 1$	<b>N1</b>	<b>2</b>	
<b>(ii)</b>	$h(x) =  x+1 $	<b>N1</b>		
<b>(b)(i)</b>	$m = 3$	<b>N1</b>	<b>2</b>	
<b>(ii)</b>	$f(x) \geq 1$	<b>N1</b>		<b>4</b>

**SOALAN 10 : SOALAN PERCUBAAN SPM SBP 2023 (KERTAS 1)**

<b>7(a)</b>	<b><math>KD(p)</math> @ <math>DK(p)</math> dilihat</b>	<b>K1</b>	<b>3</b>	
<b>(i)</b>	<b><math>KD(p) = 0.85p - 20</math></b>	<b>N1</b>		
<b>(ii)</b>	<b><math>DK(p) = 0.85(p - 20)</math> @ <math>DK(p) = 0.85p - 17</math></b>	<b>N1</b>		
<b>(b)</b>	<b>*<math>KD(1899) = 0.85(1899) - 20</math></b>	<b>K1</b>	<b>2</b>	
	<b>RM 1 594.00</b>	<b>N1</b>		<b>5,</b>

**SOALAN 11 : SOALAN PERCUBAAN SPM SBP 2023 (KERTAS 2)**

2(a)(i)



2

Bersimetri pada  $y = x$  dan melalui titik  $(1, 0)$  **P1**

(a)(ii)  $y = \log_a x$  ialah fungsi songsang bagi  $y = a^x$  **N1**

**SOALAN 12 : SOALAN PERCUBAAN SPM NEGERI MELAKA 2023 (KERTAS 1)**

11. (a)	$m = -4$	1
	$ -4 + 2n  = 0$	1
	$n = 2$	1
(b)	$0 \leq f(x) \leq 8$	1
(c)	$-4 + 2x \geq 2$ dan $-4 + 2x \leq -2$	1
	$x \geq 3$ dan $x \leq 1$	1

6

**SOALAN 13 : SOALAN PERCUBAAN SPM NEGERI SELANGOR SET 1 2023 (KERTAS 1)**

<b>1</b>	(a)	(1,3)	N1	
	(b)	Guna $y - y_1 = m(x - x_1)$ $g: x \rightarrow 2x - 5$	K1 N1	
				<b>3</b>

**SOALAN 14 : SOALAN PERCUBAAN SPM NEGERI SELANGOR SET 1 2023 (KERTAS 1)**

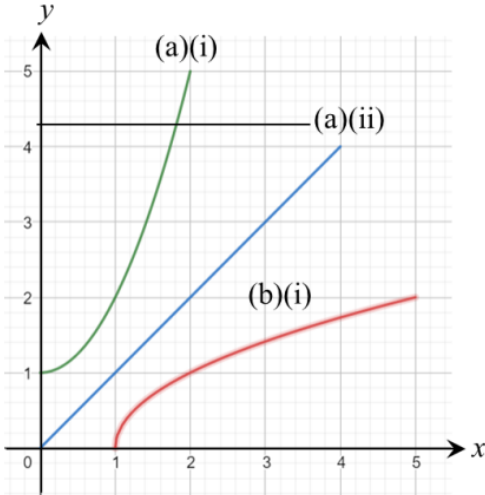
<b>2</b>	(a)	$f(n) = (5.30 - 4.50)n - 120$ $f(n) = 0.8n - 120$	K1 N1	
	(b)	$0.8n - 120 = 0$ 150	K1 N1	
				<b>4</b>

**SOALAN 15 : SOALAN PERCUBAAN SPM NEGERI PERAK 2023 (KERTAS 1)**

<b>3</b>	(a)	(i)	<table border="1"> <tr> <td>x</td> <td>-2</td> <td>1</td> <td>3</td> </tr> <tr> <td>f(x)</td> <td>3</td> <td>0</td> <td>2</td> </tr> </table>	x	-2	1	3	f(x)	3	0	2	<b>1</b>	<b>6</b>
		x	-2	1	3								
		f(x)	3	0	2								
	(ii)	$f(x) =  x - 1 $	<b>1</b>										
(iii)	Julat/Range: $0 \leq f(x) \leq 3$	<b>1</b>											
(b)	$h^2(x) = hh(x) = h\left(\frac{1}{2x}\right) = \frac{1}{2\left(\frac{1}{2x}\right)} = x$  $h^3(x) = hh^2\left(\frac{1}{2x}\right) = h(x) = \frac{1}{2x}$ $h^4(x) = h^2h^2(x) = h^2(x) = x$	<b>1</b>  <b>1</b> <b>1</b>											



**SOALAN 16 : SOALAN PERCUBAAN SPM NEGERI PERAK 2023 (KERTAS 2)**

3	(a)	i		1	7
		ii	Rujuk (a)(i) Lukis garis mengufuk yang memotong graf di a(i)	1	
			Fungsi songsang untuk f wujud sebab berjaya dalam ujian garisan mengufuk/ garis mengufuk hanya memotong graf hanya di satu titik di mana-mana bahagian	1	
	(b)	i	Lukis garis lurus $y=x$ Lakar graf b(i) [rujuk rajah]	1 1	
		ii	$f(x) = \sqrt{x-1}$ atau $f : x \rightarrow \sqrt{x-1}$	1	
		iii	$0 \leq y \leq 2$	1	