

**MODUL PINTAS  
TINGKATAN 5**

**ADDITIONAL MATHEMATICS  
Kertas 1**

**3472/1**

2 jam

**Dua jam**

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**PERATURAN PEMARKAHAN  
ADDITIONAL MATHEMATICS K1**

**3472/1**

1.	(a)	$k = 11$	1 mark
	(b)	$f(x) = x + 3$	1 mark
2.	(a)	$3t - 2 = 0$  $t = \frac{2}{3}$	2 marks  B1
	(b)	$0 \leq f(x) \leq 10$	1 mark
3.		$k = 15$ dan $p = 2$  $k = 15$ atau $p = 2$  $\frac{-(5-k)}{2} = 3 + p$ dan $-\frac{3}{2} + \frac{k}{2} = 3p$  $x^2 + \frac{(5-k)}{2}x - \frac{3}{2} + \frac{k}{2} = 0$ dan $x^2 - (3+p)x + 3p = 0$	4 marks  B3  B2  B1
4.	(a)	$m = \frac{1}{3}$ dan $n = 2$  $0 = -m(5-2)^2 + 3$	2 marks  B1
	(b)	(2,3)	1 mark
	(c)	$x = 2$	1 mark
5.		$p > 2$ dan $p < -2$  $(p+2)(p-2) > 0$  $p^2 - 4(1)(1) > 0$	3 marks  B2  B1
6.	(a)	$b + 3a$  $\log_2 X + 3\log_2 Y$	2 marks  B1
	(b)	$\frac{a}{3}$  $\frac{\log_2 Y}{3}$	2 marks  B1
7.		$n = \frac{1}{3}$  $2 + n - 1 = 4n$	3 marks  B2

	$2^2(2^{n-1}) = 2^{4n}$	<b>B1</b>
<b>8.</b>	$3y = -x + 7$ atau $y = -\frac{1}{3}x + \frac{7}{3}$ $3 = -\frac{1}{3}(-2) + c$ atau $m = -\frac{1}{3}$	<b>2 marks</b>  <b>B1</b>
<b>9.</b>	$9x^2 + 9y^2 - 72x - 36y - 400 = 0$ $4(145) = 9(x^2 - 8x + 16 + y^2 - 4y + 4)$ $2\sqrt{(4-13)^2 + (2-8)^2} = 3\sqrt{(x-4)^2 + (y-2)^2}$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>
<b>10.</b>	(a) $x = 5$	<b>1 mark</b>
	(b) $\sigma = 3.742$ $\sqrt{\frac{287}{8} - 25}$	<b>2 marks</b>  <b>B1</b>
<b>11.</b>	(a) $\bar{x} = 15$	<b>1 mark</b>
	(b) $\sigma^2 = 37.5$ $\sigma^2 = \frac{2100}{8} - 15^2$	<b>2 marks</b>  <b>B1</b>
<b>12.</b>	<i>Luas kawasan berlorek = 19.66 cm<sup>2</sup></i> $Luas = \frac{1}{2}(8)^2(1.0473) - \frac{1}{2}(4)(8 \sin 60^\circ)$ $\theta = 60^\circ @ 1.0473$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>
<b>13.</b>	(a) $\frac{dy}{dx} = 12$ $\frac{dy}{dx} = 10x + 2$	<b>2 marks</b>  <b>B1</b>
	(b) $\delta y = 12q$ $\delta y = 12 \times q$	<b>2 marks</b>  <b>B1</b>
<b>14.</b>	43, 46, 49 $a + a + d + a + 2d = 138 @ a = 43$ $d = 3$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>

15.	$S_{\infty} = 27$ $S_{\infty} = \frac{18}{1 - \frac{1}{3}}$ $d = \frac{1}{3}$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>
16.	$n = 20$ $54 + (n - 1)(-3) < 0$ $d = -3$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>
17.	<b>(a)</b> $h = 5$ and $k = 3$ $h = 5$ or $k = 3$ $1 = -\frac{2}{3}(h) + \frac{11}{3}$ or $k = -\frac{2}{3}(1) + \frac{11}{3}$	<b>3 marks</b>  <b>B2</b>  <b>B1</b>
18.	<b>(a)</b> $k = 9$ $k(2) - 18 = 0$	<b>2 marks</b>  <b>B1</b>
	<b>(b)</b> $y = \frac{9}{2}x^2 - 18x + 21$ or $2y = 9x^2 - 36x + 42$ $3 = \frac{9}{2}(2)^2 - 18(2) + c$	<b>2 marks</b>  <b>B1</b>
19.	<b>(a)</b> $m = -2$	<b>1 mark</b>
	<b>(b)</b> $n = 4$	<b>1 mark</b>
20.	<b>(a)</b> $\overrightarrow{OA} = 6i + 2j$	<b>1 mark</b>
	<b>(b)</b> $\overrightarrow{AB} = \begin{pmatrix} -4 \\ 6 \end{pmatrix}$ $\overrightarrow{AB} = \begin{pmatrix} -6 \\ -2 \end{pmatrix} + \begin{pmatrix} 2 \\ 8 \end{pmatrix}$	<b>2 marks</b>  <b>B1</b>
21.	$\theta = 30^{\circ}, 150^{\circ}$ $\sin \theta = \frac{1}{2}$ $\cos \theta = 2\sin \theta \cos \theta$	<b>4marks</b>  <b>B3</b>  <b>B2</b>

	$\frac{1}{\sin 2\theta} = \frac{1}{\cos \theta}$	<b>B1</b>
<b>22.</b>	(a) 2520 ${}^7P_5$	<b>2 marks</b> <b>B1</b>
	(b) 720 ${}^4P_1 \times {}^5P_3 \times {}^2P_1$	<b>2 marks</b> <b>B1</b>
<b>23.</b>	(a) $\frac{1}{2}$	<b>1 mark</b>
	(b) $\frac{1}{5}$ $\frac{2}{10}$	<b>2 marks</b> <b>B1</b>
<b>24.</b>	0.1823 $\frac{0.3646}{2} @ 0.3646$	<b>3 marks</b> <b>B2</b>
	$\frac{1 - 0.6354}{2}$	<b>B1</b>
<b>25.</b>	0.2924	<b>4 marks</b>
	${}^{12}C_{10}(0.85)^{10}(0.15)^2$	<b>B3</b>
	$n = 12, p = 0.85, q = 0.15$	<b>B2</b>
	<i>Kebarangkalian lulus = 0.85, kebarangkalian gagal = 0.15</i>	<b>B1</b>