

SULIT
1449/2
Matematik
Kertas2
Peraturan
Pemarkahan
Oktober
2021

SKEMA
MODUL KECEMERLANGAN BERFOKUS
SET 2
2021

MATEMATIK

Kertas 2

PERATURAN PEMARKAHAN

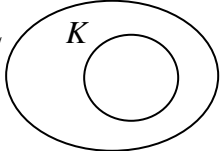
Peraturan pemarkahan ini mengandungi 11 halaman bercetak

[Lihat sebelah

1449/2
1449/2

SULIT
SULIT

Bahagian A
[40 markah]

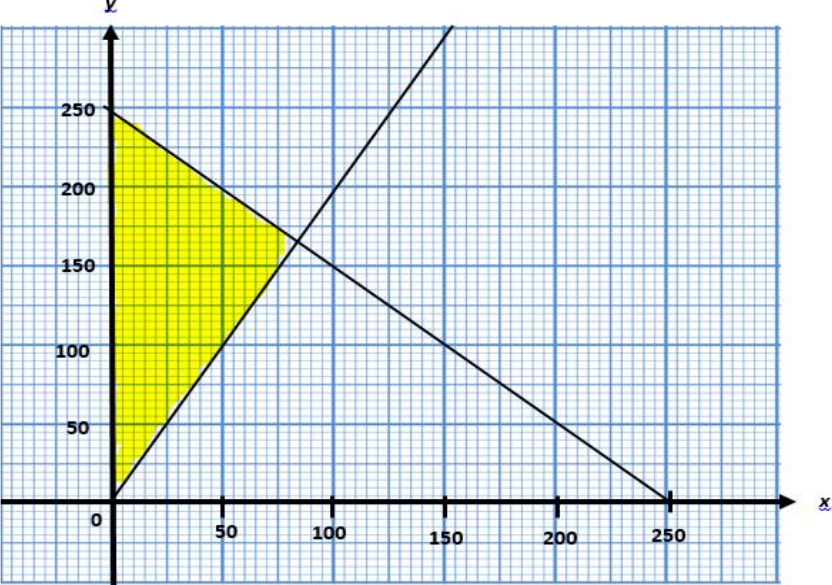
| No | Peraturan Pemarkahan | Markah | |
|----|---|------------------------------|----------|
| 1. | a) {1}, {4}, {9}, {1,4}, {1,9}, {4,9}, {1,4,9}, { } b)  | 1 1 1 | 3 |
| 2 | $9x + 7y = 310$ atau $5x + 8y = 275$ $37y = 925$ y (biskut badam) = 25 atau x (Biskut coklat) = 15 RM210 | 1 1 1 1 | 4 |
| 3 | $2x^2 - 3x - 5 = 0$ $(2x - 5)(x + 1) = 0$ $x = 5/2$ $x = -1$ | 1 1 1 1 | 4 |
| 4 | $GF = \sqrt{10^2 - 6^2}$ $GF = 8 \text{ cm}$ $[22/7 \times 5^2] - [1/2 \times 6 \times 8]$ 54.57 (2tp) | 1 1 1 | 3 |
| 5 | $2 \times 22/7 \times 3.5 \times 10 = 220$ 220×10 $\frac{2200}{100}$ 22 | 1 1 1 1 | 4 |

| No | Peraturan Pemarkahan | Markah | |
|----|---|---------------------------------------|---|
| 6 | (a) $x = 3$ (b) $-4 = -2(10) + c$ $c = 16$ $y = -2x + 16$ $0 = -2x + 16$ Pintasan- $x = 8$ | 1 1 1 1 | 4 |
| 7 | (a) Palsu (b) Implikasi 1: Jika 20% daripada 30 ialah 6, maka $0.2 \times 30 = 6$ Implikasi 2: Jika $0.2 \times 30 = 6$, maka 20% daripada 30 ialah 6 (c) $4n^2 + 8$, di mana $n = 1, 2, 3, 4, \dots$ | 1 1 1 1, 1 | 5 |
| 8 | a) $\left[\left(\frac{x}{x+3} \right) \times \left(\frac{8}{12} \right) \right] + \left[\left(\frac{3}{x+3} \right) \times \left(\frac{4}{12} \right) \right] = \frac{13}{24}$ $x = 5$ b) $\left(\frac{5}{8} \times \frac{4}{12} \right) \text{ or } \left(\frac{5}{8} \times \frac{8}{12} \right) \text{ or } \left(\frac{3}{8} \times \frac{4}{12} \right)$ $\left(\frac{5}{8} \times \frac{4}{12} \right) + \left(\frac{5}{8} \times \frac{8}{12} \right) + \left(\frac{3}{8} \times \frac{4}{12} \right)$ $\frac{3}{4}$ | 1 1 1 1 1 | 5 |
| 9 | a) $16ms^{-1}$ b) $\frac{1}{2}(t-12+t)16$ $\frac{1}{2}(t-12+t)16 - \frac{1}{2}(16)t = 24$ $t = 15$ | 1 1 1 1 | 4 |

| No | Peraturan Pemarkahan | Markah | |
|----|--|------------------|---|
| 10 | $\begin{pmatrix} 8 & 3 \\ -3 & -2 \end{pmatrix} \begin{pmatrix} m \\ n \end{pmatrix} = \begin{pmatrix} 4 \\ -5 \end{pmatrix}$ $\begin{pmatrix} m \\ n \end{pmatrix} = \frac{1}{(8)(-2) - (3)(-3)} \begin{pmatrix} -2 & -3 \\ 3 & 8 \end{pmatrix} \begin{pmatrix} 4 \\ -5 \end{pmatrix}$ $m = -1$ $n = 4$ | 1 1 1 1 | 4 |

Bahagian B
[45 markah]

| No | Peraturan Pemarkahan | Markah | |
|----|--|--------|--|
| 11 | a) $x + y \leq 250$ $y \geq 2x$ b) | 1 1 | |

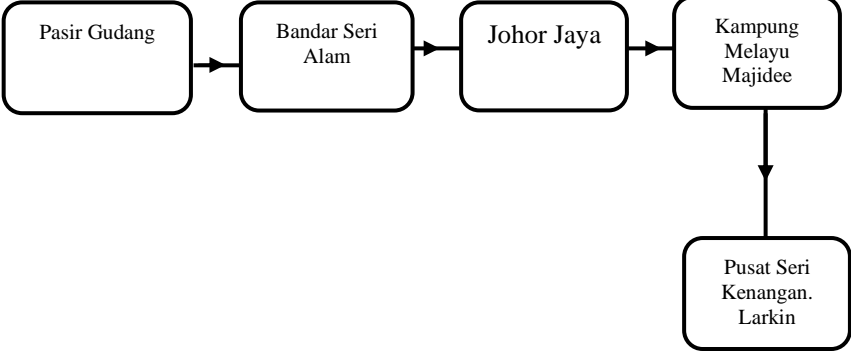
| No | Peraturan Pemarkahan | Markah | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|--|--|--|-------------------------------------|--------------------------|-------|--------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|---------------|--|--|----------------------|--|--------------------------|---|---|
| |  <p data-bbox="459 792 528 824">c) 85</p> | <p data-bbox="1289 309 1305 340">1</p> <p data-bbox="1289 376 1305 407">1</p> <p data-bbox="1289 443 1305 474">1</p> <p data-bbox="1289 510 1305 542">1</p> <p data-bbox="1289 741 1305 772">1</p> | <p data-bbox="1437 443 1453 474">7</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | <p data-bbox="443 831 869 862">i) Kelas Budiman/ <i>Budiman Class</i></p> <table border="1" data-bbox="384 909 1241 1547"> <thead> <tr> <th>Markah/ Marks</th> <th>Kekerapan/ Frequency (f)</th> <th>Titik Tengah/ Midpoint (x)</th> <th>fx</th> <th>x^2</th> <th>fx^2</th> </tr> </thead> <tbody> <tr> <td>55-59</td> <td>4</td> <td>57</td> <td>228</td> <td>3249</td> <td>12996</td> </tr> <tr> <td>60-64</td> <td>6</td> <td>62</td> <td>372</td> <td>3844</td> <td>23064</td> </tr> <tr> <td>65-69</td> <td>5</td> <td>67</td> <td>335</td> <td>4489</td> <td>22445</td> </tr> <tr> <td>70-74</td> <td>4</td> <td>72</td> <td>288</td> <td>5184</td> <td>20736</td> </tr> <tr> <td>75-79</td> <td>4</td> <td>77</td> <td>308</td> <td>5929</td> <td>23716</td> </tr> <tr> <td>80-84</td> <td>2</td> <td>82</td> <td>164</td> <td>6724</td> <td>13448</td> </tr> <tr> <td colspan="2" style="text-align: center;">$\Sigma f=25$</td> <td></td> <td style="text-align: center;">$\Sigma fx=$ 1695</td> <td></td> <td style="text-align: center;">$\Sigma fx^2=$ 116405</td> </tr> </tbody> </table> <p data-bbox="485 1585 804 1704"> $\text{Min, } \frac{\Sigma fx}{\Sigma f} = \frac{1695}{25}$ $=67.8$ </p> <p data-bbox="469 1783 948 2024"> $\text{Sisihan piawai: } \sqrt{\frac{\Sigma fx^2}{\Sigma f} - \overline{x}^2}$ $= \sqrt{\frac{116405}{25} - \left(\frac{1695}{25}\right)^2}$ $=7.70$ </p> | Markah/ Marks | Kekerapan/ Frequency (f) | Titik Tengah/ Midpoint (x) | fx | x^2 | fx^2 | 55-59 | 4 | 57 | 228 | 3249 | 12996 | 60-64 | 6 | 62 | 372 | 3844 | 23064 | 65-69 | 5 | 67 | 335 | 4489 | 22445 | 70-74 | 4 | 72 | 288 | 5184 | 20736 | 75-79 | 4 | 77 | 308 | 5929 | 23716 | 80-84 | 2 | 82 | 164 | 6724 | 13448 | $\Sigma f=25$ | | | $\Sigma fx=$ 1695 | | $\Sigma fx^2=$ 116405 | <p data-bbox="1289 1637 1305 1668">1</p> <p data-bbox="1289 1738 1305 1769">1</p> <p data-bbox="1289 1939 1305 1971">1</p> <p data-bbox="1289 2007 1305 2038">1</p> | <p data-bbox="1437 898 1453 929">10</p> |
| Markah/ Marks | Kekerapan/ Frequency (f) | Titik Tengah/ Midpoint (x) | fx | x^2 | fx^2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55-59 | 4 | 57 | 228 | 3249 | 12996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60-64 | 6 | 62 | 372 | 3844 | 23064 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 65-69 | 5 | 67 | 335 | 4489 | 22445 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70-74 | 4 | 72 | 288 | 5184 | 20736 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75-79 | 4 | 77 | 308 | 5929 | 23716 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80-84 | 2 | 82 | 164 | 6724 | 13448 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Sigma f=25$ | | | $\Sigma fx=$ 1695 | | $\Sigma fx^2=$ 116405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No | Peraturan Pemarkahan | Markah | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|--------------------------------|-------------------------------------|-------------------------------------|-------|--------------------------|--------|-------|---|----|-----|------|------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|-----|------|-------|-------|---|----|----|------|------|--|---------------|--|----------------------|--|--------------------------|---|
| 13. | <p data-bbox="363 215 679 246">Kelas Jujur/ <i>Jujur Class</i></p> <table border="1" data-bbox="384 284 1241 837"> <thead> <tr> <th data-bbox="384 284 539 432">Markah/ Marks</th> <th data-bbox="539 284 694 432">Kekerapan/ Frequency (f)</th> <th data-bbox="694 284 849 432">Titik Tengah/ Midpoint (x)</th> <th data-bbox="849 284 971 432">fx</th> <th data-bbox="971 284 1094 432">x^2</th> <th data-bbox="1094 284 1241 432">fx^2</th> </tr> </thead> <tbody> <tr> <td data-bbox="384 432 539 477">55-59</td> <td data-bbox="539 432 694 477">3</td> <td data-bbox="694 432 849 477">57</td> <td data-bbox="849 432 971 477">171</td> <td data-bbox="971 432 1094 477">3249</td> <td data-bbox="1094 432 1241 477">9747</td> </tr> <tr> <td data-bbox="384 477 539 521">60-64</td> <td data-bbox="539 477 694 521">7</td> <td data-bbox="694 477 849 521">62</td> <td data-bbox="849 477 971 521">434</td> <td data-bbox="971 477 1094 521">3844</td> <td data-bbox="1094 477 1241 521">26908</td> </tr> <tr> <td data-bbox="384 521 539 566">65-69</td> <td data-bbox="539 521 694 566">8</td> <td data-bbox="694 521 849 566">67</td> <td data-bbox="849 521 971 566">536</td> <td data-bbox="971 521 1094 566">4489</td> <td data-bbox="1094 521 1241 566">35912</td> </tr> <tr> <td data-bbox="384 566 539 611">70-74</td> <td data-bbox="539 566 694 611">3</td> <td data-bbox="694 566 849 611">72</td> <td data-bbox="849 566 971 611">216</td> <td data-bbox="971 566 1094 611">5184</td> <td data-bbox="1094 566 1241 611">15552</td> </tr> <tr> <td data-bbox="384 611 539 656">75-79</td> <td data-bbox="539 611 694 656">3</td> <td data-bbox="694 611 849 656">77</td> <td data-bbox="849 611 971 656">231</td> <td data-bbox="971 611 1094 656">5929</td> <td data-bbox="1094 611 1241 656">17787</td> </tr> <tr> <td data-bbox="384 656 539 701">80-84</td> <td data-bbox="539 656 694 701">1</td> <td data-bbox="694 656 849 701">82</td> <td data-bbox="849 656 971 701">82</td> <td data-bbox="971 656 1094 701">6724</td> <td data-bbox="1094 656 1241 701">6724</td> </tr> <tr> <td data-bbox="384 701 539 837"></td> <td data-bbox="539 701 694 837">$\Sigma f=25$</td> <td data-bbox="694 701 849 837"></td> <td data-bbox="849 701 971 837">$\Sigma fx=$ 1670</td> <td data-bbox="971 701 1094 837"></td> <td data-bbox="1094 701 1241 837">$\Sigma fx^2=$ 112630</td> </tr> </tbody> </table> <p data-bbox="363 904 627 1021">Min , $\frac{\Sigma fx}{\Sigma f} = \frac{1670}{25}$ =66.8</p> <p data-bbox="363 1066 849 1308">Sisihan piawai: $\sqrt{\frac{\Sigma fx^2}{\Sigma f} - \bar{x}^2}$ = $\sqrt{\frac{112630}{25} - \left(\frac{1670}{25}\right)^2}$ =6.55</p> <p data-bbox="363 1357 1233 1424">ii) Kelas Jujur lebih konsisten daripada kumpulan Kelas Budiman kerana sisihan piawainya lebih kecil (6.55 < 7.70)</p> <p data-bbox="411 1536 772 1570">a) i) (3, 0) \longrightarrow (-1, 2)</p> <p data-bbox="411 1570 772 1603">b) ii) (5, 4) \longrightarrow (3, 2)</p> <p data-bbox="459 1603 839 1709">b)i S : Pantulan, pada garis $x=-1$ S : <i>Reflection at the line $x=-1$</i></p> <p data-bbox="483 1749 1090 1812">R : Pembesaran, Faktor skala, 2 pada pusat (1,3) R : <i>Enlargement, Scale factor, 2 at the centre (1,3)</i></p> | Markah/ Marks | Kekerapan/ Frequency (f) | Titik Tengah/ Midpoint (x) | fx | x^2 | fx^2 | 55-59 | 3 | 57 | 171 | 3249 | 9747 | 60-64 | 7 | 62 | 434 | 3844 | 26908 | 65-69 | 8 | 67 | 536 | 4489 | 35912 | 70-74 | 3 | 72 | 216 | 5184 | 15552 | 75-79 | 3 | 77 | 231 | 5929 | 17787 | 80-84 | 1 | 82 | 82 | 6724 | 6724 | | $\Sigma f=25$ | | $\Sigma fx=$ 1670 | | $\Sigma fx^2=$ 112630 | <p data-bbox="1289 909 1310 936">1</p> <p data-bbox="1289 1010 1310 1037">1</p> <p data-bbox="1289 1211 1310 1238">1</p> <p data-bbox="1289 1279 1310 1305">1</p> <p data-bbox="1289 1379 1310 1406">1</p> <p data-bbox="1289 1413 1310 1440">1</p> <p data-bbox="1289 1581 1310 1608">1</p> <p data-bbox="1289 1615 1310 1641">1</p> <p data-bbox="1289 1648 1310 1675">1</p> <p data-bbox="1289 1682 1310 1709">1</p> <p data-bbox="1289 1715 1310 1742">1</p> <p data-bbox="1289 1749 1310 1776">1</p> <p data-bbox="1289 1783 1310 1809">1</p> <p data-bbox="1289 1816 1310 1843">1</p> <p data-bbox="1289 1850 1310 1877">1</p> <p data-bbox="1437 1749 1458 1776">9</p> |
| | Markah/ Marks | Kekerapan/ Frequency (f) | Titik Tengah/ Midpoint (x) | fx | x^2 | fx^2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 55-59 | 3 | 57 | 171 | 3249 | 9747 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 60-64 | 7 | 62 | 434 | 3844 | 26908 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 65-69 | 8 | 67 | 536 | 4489 | 35912 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 70-74 | 3 | 72 | 216 | 5184 | 15552 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 75-79 | 3 | 77 | 231 | 5929 | 17787 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 80-84 | 1 | 82 | 82 | 6724 | 6724 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $\Sigma f=25$ | | $\Sigma fx=$ 1670 | | $\Sigma fx^2=$ 112630 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No | Peraturan Pemarkahan | Markah |
|-----|--|---|
| 14. | <div style="text-align: center;"> </div> <p>Pelan: Bentuk betul dengan empat segiempat tepat . $LM > PS = ST < TU = RS$ Semua ukuran betul ± 0.2 cm dan sudut dibucu segi empat tepat $90^\circ \pm$</p> <p>Dongakan Depan : Bentuk betul dengan empat segiempat tepat KLPQ dan PQRS $LP < PS > RS = QP$ Semua ukuran betul ± 0.2 cm dan sudut dibucu segi empat tepat $90^\circ \pm$</p> <p>Dongakan Sisi: Bentuk betul LPSTM $LP < PS > ST < TM < LM$ Semua ukuran betul ± 0.2 cm dan sudut dibucu tepat $90^\circ \pm$ Ketiga-tiga Lukisan menggunakan sudut 45°</p> | <p>10</p> <p>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</p> |
| 15. | <p>a) $RM86\ 500 - [RM9000 + RM7000 + RM1500 + RM2500 + RM2200 + RM2000]$</p> <p>Pendapatan Bercukai = $RM\ 62\ 300$</p> <p>b) Cukai pendapatan $(RM6\ 2300 - RM50\ 000) \times 14\%$ $= RM1722.00$</p> <p>$RM1722 + RM1800(\text{Cukai dasar}) - RM\ 600(\text{Zakat})$</p> | <p>9</p> <p>1 1 1 1</p> |

| No | Peraturan Pemarkahan | Markah | |
|----|--|-------------------------------------|--|
| | <p>= RM 2922.00</p> <p>c) $RM230 \times 12 = RM 2760$ $RM2922 - RM2760$ $= RM 162$</p> <p>Puan Fatimah perlu membuat bayaran sebanyak RM162 kepada LHDN kerana jumlah PCB yang dipotong tidak mencukupi untuk cukai pendapatan yang perlu dibayarnya.</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> | |

Bahagian C
[15 markah]
[15 marks]

| No | Peraturan Pemarkahan | Markah | | |
|------|--|--------|----------|--|
| 16a) | 11% RM4450 | 1 | | |
| b) | $x + y = 70 @$ $22x + 28y = 1780$ $\begin{pmatrix} 1 & 1 \\ 22 & 28 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 70 \\ 1780 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{1(28) - 1(22)} \begin{pmatrix} 28 & -1 \\ -22 & 1 \end{pmatrix} \begin{pmatrix} 70 \\ 1780 \end{pmatrix} @ setara$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{6} \begin{pmatrix} 28(70) & + (-1(1780)) \\ -22(70) & + 1(1780) \end{pmatrix} @ setara$ (jalan kerja yang mesti ditunjukkan) $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 30 \\ 40 \end{pmatrix}$ <p><i>Baju, x = 30</i> <i>Seluar y = 40</i></p> | 1 | 5 | |
| | | 1 | | |
| | | 1 | | |
| | | | | |
| | | 1 | | |
| | | 1 | | |
| c) |  <pre> graph LR A[Pasir Gudang] --> B[Bandar Seri Alam] B --> C[Johor Jaya] C --> D[Kampung Melayu Majidee] D --> E[Pusat Seri Kenangan Larkin] </pre> | 1 | 2 | |
| | | 1 | | |

| No | Peraturan Pemarkahan | Markah | |
|----------------------|---|--|--|
| d) | Polisi Komprehensif a) 1000 pertama = RM 372.60 b) Jumlah diinsurankan= $= \text{RM}26 \times \frac{120000 - 1000}{1000}$ $= \text{RM}3094.00$ c) Premium asas= RM 372.60+ RM3094.00 $= \text{RM}3466.60$ d) NCD = 45% ×RM3466.60 = RM1559.97 e) Premium Kasar = RM3466.60-RM1559.97 $= \text{RM}1906.63$ | 1 1 1 1 1 1 | |
| JUMLAH MARKAH | | 15 | |

| No | Peraturan Pemarkahan | Markah | |
|----|----------------------|--------|--|
|----|----------------------|--------|--|

| No | Peraturan Pemarkahan | Markah | |
|-------|---|---|----------|
| 17 a) | (i) 20 m (ii) $\frac{1}{2} \times [(x - 18) + 50] \times (2x - 4)$ $x^2 + 30x - 64$ (iii) $\frac{1}{2} \times 20 \times (2x - 4) = 1000$ $20x = 1040$ $x = 52$ | 1 1 1 1 1 1 | 6 |
| 17 b) | $PQ = \sqrt{100^2 + 20^2}$ $= 102$ Panjang AB + BE $= 102 + 20$ $= 122$ $122 \times \text{RM}15$ $= \text{RM}1830$ $1830 + \left[\frac{1}{3} \times 1830 \right]$ $= \text{RM}2440$ Mencukupi | 1 1 1 1 1 | 6 |

| No | Peraturan Pemarkahan | Markah | |
|----------------------|--|-----------|----------|
| 17 c) | $100\,000 + (100\,000 \times 0.05 \times 9)$ $= \text{RM}145\,000$ $\frac{145\,000}{9 \times 12}$ $\text{RM } 1342.59$ | 1 | |
| | | 1 | 3 |
| | | 1 | |
| JUMLAH MARKAH | | 15 | |