



SEKOLAH MENENGAH KEBANGSAAN **NAMA SEKOLAH**  
PULAU PINANG

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TINGKATAN 5

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MATEMATIK  
KERTAS 2

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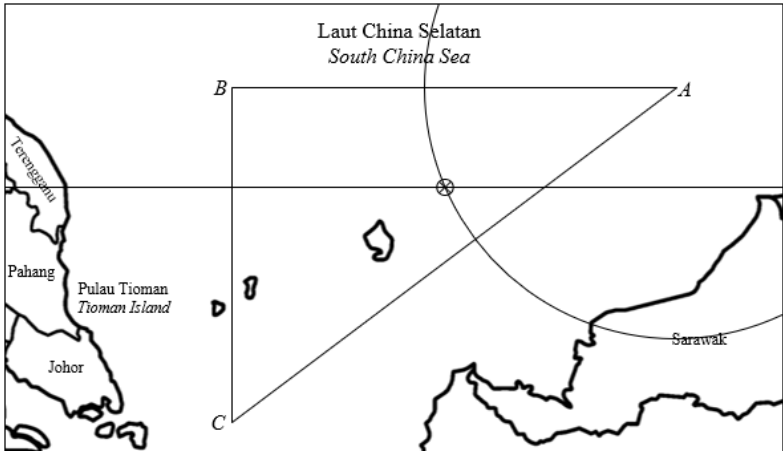
*UNTUK KEGUNAAN PEMERIKSA SAHAJA*

# PERATURAN PEMARKAHAN

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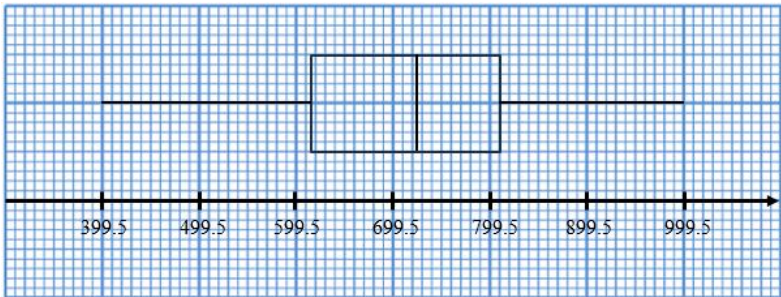
Peraturan pemarkahan ini mengandungi 15 halaman bercetak.

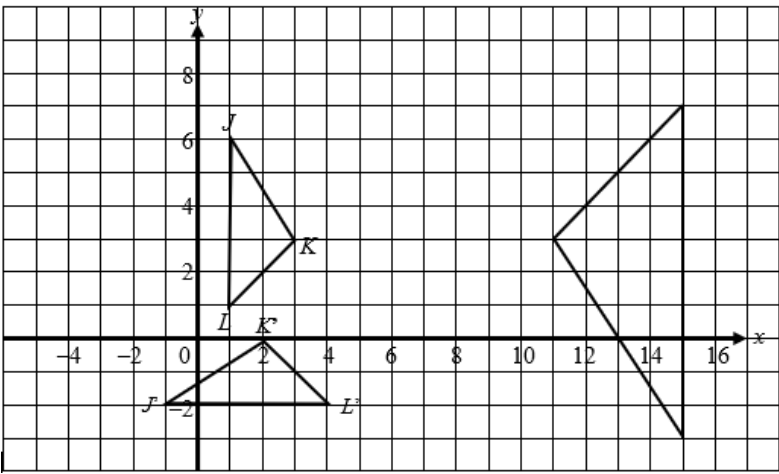
| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                            | Sub Markah                     | Jumlah Markah |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------|
| 1 (a)  | $(-2, 0)$                                                                                                                                                                                                                    | 1                              | 3             |
| (b)    | $x = \frac{3}{2}$                                                                                                                                                                                                            | 1                              |               |
|        | $\left(\frac{3}{2}, \frac{49}{4}\right)$                                                                                                                                                                                     | 1                              |               |
|        | Nota // Notes :<br>Persamaan dalam bentuk perpuluhan tidak diterima. //<br><i>Equation in the form of decimals is not accepted.</i>                                                                                          |                                |               |
| 2      | 1 dan // and 6<br><br>Tambah dua nombor bersebelahan //<br><i>Add two numbers consecutively</i><br><br>atau // or<br><br>Sebutan pertama dan terakhir sentiasa bernilai 1 //<br><i>The first and last terms are always 1</i> | 1<br><br><br><br><br><br><br>1 | 2             |
| 3      | $260^\circ$ atau // or $50^\circ$<br><br>$p = 80^\circ$<br><br>$q = 40^\circ$                                                                                                                                                | 1<br><br>1<br><br>1            | 3             |
| 4 (a)  | $\frac{9\left(\frac{3.5}{100} \times 75\,000\right) + 75\,000}{9(12)}$<br>RM 913.19                                                                                                                                          | 1<br><br>1                     | 5             |
| (b)    | $3\,200 + 850$ atau // or $800 + 1\,000 + 700 + 500 + 913.19$<br><br>$3\,200 + 850 - (800 + 1\,000 + 700 + 500 + 913.19)$ atau //<br>or setara // <i>equivalent</i><br><br>RM 136.81                                         | 1<br><br>1<br><br>1            |               |
|        |                                                                                                                                                                                                                              | 1                              |               |

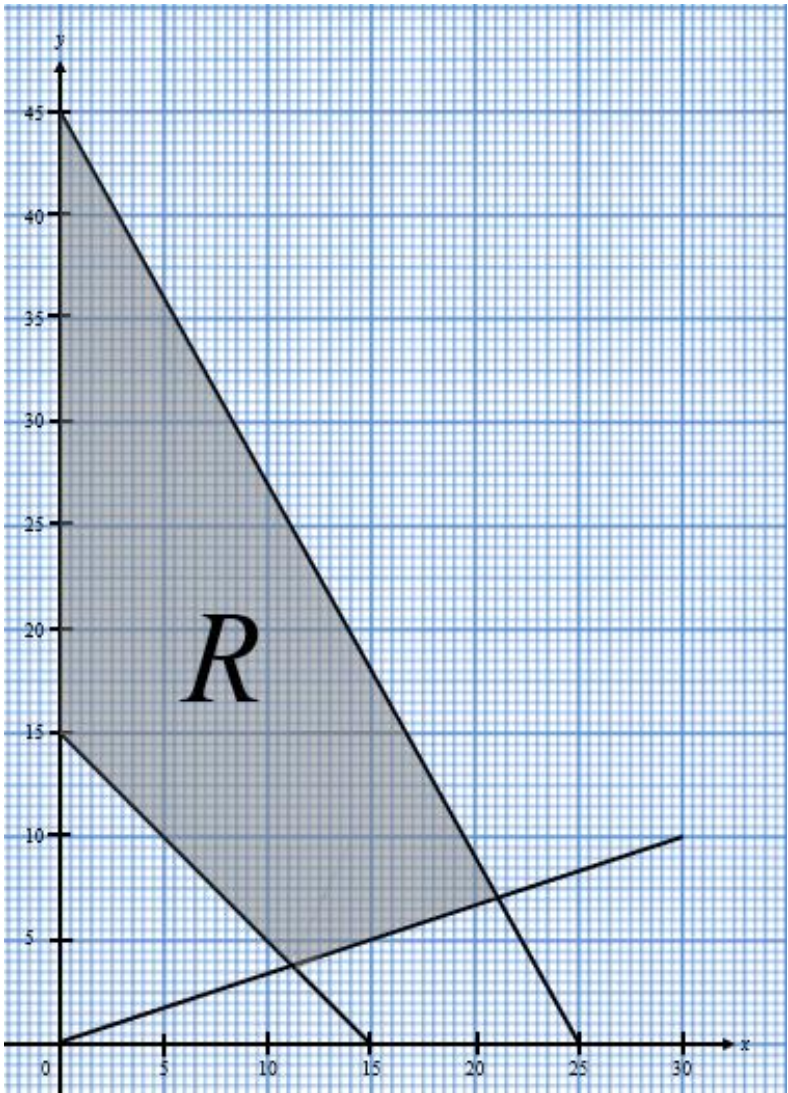
| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sub Markah                                   | Jumlah Markah |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------|
| 5      |  <p>Bulatan berpusat di A dengan jejari 5 cm //<br/>A circle with centre A and radius 5 cm</p> <p>Garis lurus selari 2 cm dari garis AB //<br/>A parallel straight lines 2 cm from line AB</p> <p>Tandakan kedudukan pelantar minyak<br/>Mark the position of the oil rig</p>                                                                                                                                                                                                                                                                      | <p>1</p> <p>1</p> <p>1</p>                   | 3             |
| 6      | <p>(a) <math>2p - 3(1) = 0</math></p> <p><math>\frac{3}{2}</math> atau // or <math>1\frac{1}{2}</math> atau // or 1.5</p> <p>(b) <math>\begin{pmatrix} 75 &amp; 80 \\ 78 &amp; 85 \end{pmatrix} \begin{pmatrix} 0.5 \\ 0.5 \end{pmatrix}</math> atau // or <math>\begin{pmatrix} 75 &amp; 80 \\ 78 &amp; 85 \end{pmatrix} \begin{pmatrix} 0.5 \\ 0.5 \end{pmatrix}</math> atau // or setara // equivalent</p> <p>77.5 dan // and 81.5</p> <p>Fizik // Physics</p> <p>Nota : Jangan terima penyelesaian yang betul menggunakan kaedah selain daripada matriks.<br/>Notes : Do not accept correct answers not using matrix method.</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> | 5             |

| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sub Markah | Jumlah Markah |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|
| 7 (a)  | <p>Menari<br/><i>Dancing</i></p> <p>Melukis<br/><i>Drawing</i></p> <p>Membaca<br/><i>Reading</i></p> <p>Semua unsur dilabel dengan betul //<br/><i>All elements correctly labelled</i></p> <p>Nota // <i>Notes</i> :</p> <ol style="list-style-type: none"> <li>Kedudukan unsur 5, 10, 16, 12 dan 14 dilabel dengan betul, beri 2 markah //<br/><i>The positions of elements 5, 10, 16, 12 and 14 are correctly labelled, award 2 marks.</i></li> <li>Kedudukan unsur 10, 16 dan 12 dilabel dengan betul, beri 1 markah //<br/><i>The positions of elements 10, 16 and 12 are correctly labelled, award 1 mark.</i></li> <li>Titik di sebelah bilangan unsur, beri 0 markah. //<br/><i>Dot beside number of elements, award 0 mark.</i></li> </ol> | 3          |               |
| (b)    | <p><math>12 + 16 + 28</math></p> <p>56</p> <p>Nota // <i>Notes</i> :</p> <p>Terima jawapan akhir tanpa jalan kerja untuk 2 markah. //<br/><i>Accept final answer without working for 2 marks.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1<br>1     | 5             |
| 8 (a)  | Palsu // <i>False</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1          |               |
| (b)    | <p>Jika <math>p</math> boleh dibahagi tepat dengan 2, maka <math>p</math> adalah nombor genap. // <i>If <math>p</math> is divisible by 2, then <math>p</math> is an even number.</i></p> <p>Benar // <i>True</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1<br>1     |               |
| (c)    | <p>Tidak sah // <i>Not valid</i></p> <p>Tidak munasabah // <i>Not sound</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1<br>1     | 5             |

| Soalan        | Penyelesaian Dan Skema Pemarkahan                                                                    | Sub Markah | Jumlah Markah |
|---------------|------------------------------------------------------------------------------------------------------|------------|---------------|
| <b>9</b> (a)  | $\frac{25 + 28 + 30 + 32 + 32 + 38 + 40 + 40 + 42 + 45}{10}$                                         | <b>1</b>   | <b>4</b>      |
|               | 35.2                                                                                                 | <b>1</b>   |               |
|               | (b) $\sqrt{\frac{25^2 + 28^2 + 30^2 + 32^2 + 32^2 + 38^2 + 40^2 + 40^2 + 42^2 + 45^2}{10}} - 35.2^2$ | <b>1</b>   |               |
|               | 6.32                                                                                                 | <b>1</b>   |               |
| <b>10</b> (a) | $\frac{6}{10}$                                                                                       | <b>1</b>   | <b>5</b>      |
|               | $\frac{6}{9}$                                                                                        | <b>1</b>   |               |
|               | (b) $\frac{4}{10} \times \frac{6}{9}$ atau // or $\frac{6}{10} \times \frac{5}{9}$                   | <b>1</b>   |               |
|               | $\frac{4}{10} \times \frac{6}{9} + \frac{6}{10} \times \frac{5}{9}$                                  | <b>1</b>   |               |
|               | $\frac{3}{5}$                                                                                        | <b>1</b>   |               |
| <b>11</b> (a) | $y = 4$                                                                                              | <b>1</b>   |               |
|               | (b) $m = -\frac{4}{3}$                                                                               | <b>1</b>   |               |
|               | $0 = -\frac{4}{3}(-1) + c$                                                                           | <b>1</b>   |               |
|               | $y = -\frac{4}{3}x - \frac{4}{3}$                                                                    | <b>1</b>   |               |

| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sub Markah       | Jumlah Markah |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|
| (c)    | $(-4, 4)$<br>$\sqrt{(0 - 4)^2 + [5 - (-4)]^2}$<br>9.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1<br>1<br>1      | 7             |
| 12 (a) | Median = 724.5<br>$Q_1 = 614.5$<br>$Q_3 = 809.5$<br>Julat antara kuartil // <i>Interquartile range</i> = 195                                                                                                                                                                                                                                                                                                                                                                                                                        | 1<br>1<br>1<br>1 | 9             |
| (b)    |  <p>Paksi seragam dilabel dengan betul // <i>Uniform axis correctly labelled</i></p> <p><math>Q_1 = 614.5</math> dan // <i>and</i> <math>Q_2 = 724.5</math> dan // <i>and</i> <math>Q_3 = 809.5</math> dan // <i>and</i> dilukis dengan betul // <i>correctly drawn</i></p> <p>Nilai minimum // <i>minimum value</i> = 399.5 dan // <i>and</i> nilai maksimum // <i>maximum value</i> = 999.5 dilukis dengan betul // <i>correctly drawn</i></p> | 1<br>1<br>1      |               |
| (c)    | Taburan pencong ke kiri // <i>Skewed to the left</i><br>Bahagian kiri plot kotak lebih besar daripada bahagian kanan plot kotak. // <i>Left side of the box plot is longer than the right side of the box plot.</i>                                                                                                                                                                                                                                                                                                                 | 1<br>1           |               |

| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                                                                                                | Sub Markah  | Jumlah Markah |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|
| 13 (a) |                                                                                                                                                                                                                | 1           |               |
| (b)    | Putaran $90^\circ$ lawan arah jam pada pusat (4, 1) //<br><i>Anticlockwise rotation of <math>90^\circ</math> at centre (4, 1)</i><br><br><b>ATAU // OR</b><br><br>Putaran $270^\circ$ ikut arah jam pada pusat (4, 1) //<br><i>Clockwise rotation of <math>270^\circ</math> at centre (4, 1)</i> | 3           |               |
| (c)    | Bukan teselasi // <i>Not tessellation</i><br><br>Pola bagi bentuk tidak berulang //<br><i>Pattern for the shapes not repeated</i>                                                                                                                                                                | 1<br>1      | 6             |
| 14 (a) | $x + y \geq 15$ atau // or    setara // <i>equivalent</i><br><br>$x \leq 3y$ atau // or    setara // <i>equivalent</i><br><br>$9x + 5y \leq 225$ atau // or    setara // <i>equivalent</i>                                                                                                       | 1<br>1<br>1 |               |

| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sub Markah                          | Jumlah Markah |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|
| (b)    |  <p>Nota // Notes :</p> <p>Garis <math>x + y = 15</math> dilukis dengan garis padu //<br/> <i>Line <math>x + y = 15</math> is drawn using solid line</i></p> <p>Garis <math>x = 3y</math> dilukis dengan garis padu //<br/> <i>Line <math>x = 3y</math> is drawn using solid line</i></p> <p>Garis <math>9x + 5y = 225</math> dilukis dengan garis padu //<br/> <i>Line <math>9x + 5y = 225</math> is drawn using solid line</i></p> <p>Kawasan dilorek dengan betul //<br/> <i>The region is shaded correctly</i></p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> |               |



| Soalan  | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                        | Sub Markah       | Jumlah Markah |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|
| (c)     | $5(9) + 10(5)$<br>$225 - [5(9) + 10(5)]$<br>$130$                                                                                                                                        | 1<br>1<br>1      | 12            |
| (d)     | Tidak // <i>No</i><br>Titik (80, 60) berada di luar rantau berlorek // <i>Point (80, 60) is outside the shaded region</i>                                                                | 1<br>1           |               |
| 15 (a)  | $\frac{2}{100} \times \frac{80}{100} \times 380\,000$<br>$\frac{x}{304\,000} \times 120\,000 - \frac{2}{100} \times \frac{80}{100} \times 380\,000$<br>Tidak // <i>No</i><br>RM 9 473.68 | 1<br>1<br>1<br>1 | 10            |
| (b)(i)  | Polisi insuran pihak ketiga, kebakaran dan kecurian kerana risiko kecurian dan kebakaran // <i>Third party, fire and theft policy because the risk of theft and fire</i>                 | 1                |               |
| (b)(ii) | $\frac{75}{100} \times 3\,596.60$<br>RM 1 888.22                                                                                                                                         | 1<br>1           |               |
| (c)     | $185 \times 0.50$<br>$30 + 280 + 185 \times 0.50$<br>RM 402.50                                                                                                                           | 1<br>1<br>1      |               |
|         |                                                                                                                                                                                          | 1                |               |



| Soalan | Penyelesaian Dan Skema Pemarkahan                                                                                                                                                                             | Sub Markah | Jumlah Markah |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|
| 16     | (a) $3t + 4 = \frac{1}{2} \times 5t \times t$                                                                                                                                                                 | 1          | 15            |
|        | $5t^2 - 6t - 8 = 0$                                                                                                                                                                                           | 1          |               |
|        | $(t - 2)(5t + 4) = 0$                                                                                                                                                                                         | 1          |               |
|        | $t = 2$                                                                                                                                                                                                       | 1          |               |
|        | (b) $4x + 7y = 73$                                                                                                                                                                                            | 1          |               |
|        | $2x + 2y = 23$                                                                                                                                                                                                | 1          |               |
|        | $3y = 27$                                                                                                                                                                                                     | 1          |               |
|        | $y = 9$                                                                                                                                                                                                       | 1          |               |
|        | (c) $70\,000 + (600\,000 - 30\,000 - 475\,000 - 3\,000 - 2\,500 - 2\,000)$                                                                                                                                    | 1          |               |
|        | $\frac{157\,500}{300\,000} \times 100\%$                                                                                                                                                                      | 1          |               |
|        | 52.5%                                                                                                                                                                                                         | 1          |               |
|        | Encik Charles berjaya mencapai hasratnya dan kadar ini melebihi kadar pulangan yang diharapkan. //<br><i>Encik Charles succeeded in achieving his goal and the rate exceeded the expected rate of return.</i> | 1          |               |
|        | (d) Rawang → Banting → Kajang                                                                                                                                                                                 | 1          |               |
|        | Kos penggunaan petrol murah berbanding laluan lain. //<br><i>The cost of using petrol is cheaper compared to other routes.</i>                                                                                | 1          |               |
|        | Beza masa laluan hanya 6 minit berbanding laluan Rawang → Kajang. //<br><i>The time difference is 6 minutes compared to the Rawang → Kajang route.</i>                                                        | 1          |               |

| Soalan | Penyelesaian Dan Skema Pemarkahan                                                            | Sub Markah | Jumlah Markah |
|--------|----------------------------------------------------------------------------------------------|------------|---------------|
| 17     | (a)(i) $(4.5 - 3.5) \times 60$                                                               | 1          |               |
|        | 60                                                                                           | 1          |               |
|        | (a)(ii) $\frac{1}{2}(100)(3.5)$ atau // or $1(100)$ atau // or $\frac{1}{2}(100 + 120)(0.5)$ | 1          |               |
|        | $\frac{1}{2}(100)(3.5) + 1(100) + \frac{1}{2}(100 + 120)(1.5)$                               | 1          |               |
|        | 330                                                                                          | 1          |               |
|        | (b)(i) $x = 9\,000$                                                                          | 1          |               |
|        | $y = 57\,950$                                                                                | 1          |               |
|        | (b)(ii) $\left[10\,900 + \left(9\,500 \times \frac{24}{100}\right)\right] - 1\,000$          | 1          |               |
|        | RM 12 180                                                                                    | 1          |               |
|        | Cukai taksiran berasingan // <i>Separate tax assessment</i>                                  | 1          |               |
|        | Cukai pendapatan yang perlu dibayar lebih rendah // <i>Income tax payable is lower.</i>      | 1          |               |
|        | (c)(i) $t \propto \frac{r}{n^2}$                                                             | 1          |               |
|        | (c)(ii) $12 = \frac{k(3)}{4^2}$                                                              | 1          |               |
|        | $q = \frac{64(3.13)}{5^2}$                                                                   | 1          |               |
|        | 8.01                                                                                         | 1          | 15            |

**THE END OF MARKING SCHEME  
PERATURAN PEMARKAHAN TAMAT**