# Education Bureau <br> Territory-wide System Assessment 2011 <br> Secondary 3 Mathematics <br> Marking Scheme 

Note (for Section B and C of each sub-paper):
*Mark for Answer:
(1) The Mark for Answer may be given when there is a correct answer without any work shown.
(2) If the work shown is incorrect, the Mark for Answer will not be given.
(3) If the work shown is poorly presented but there is a correct answer, the Mark for Answer may be given.
**Mark for Presentation:
(1) If the work shown is correct but the answer is incorrect, the Mark for Presentation may be given.
(2) If the work shown is incorrect, the Mark for Presentation will not be given.
(3) If the numerical value of the answer is correct but not the approximate value as required by the question, the Mark for Presentation will not be given.
(4) The Mark for Presentation may include overall work such as mathematical expressions, units, written explanations, usage of symbol, etc.
r.t. $x x x$ means "accept answers which can be rounded to $x x x$ " .

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

Section A - Sub-paper 1 (9ME1) (1 mark each)

1. A (9ME2-1)
2. D (9ME2-2)
3. A (9ME4-2)
4. C
5. A
6. C
7. B
8. D
9. D
10. C
11. C (9ME2-11)
12. B (9ME2-12)
13. B (9ME4-12)
14. D
15. A
16. B
17. A
18. D
19. B
20. C

Section B - Sub-paper 1 (9ME1)

| Question <br> Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 21. (9ME2-21) | (i) $+200 / 200$ <br> (ii) -50 | 1 | Must be all correct |
| 22. (9ME2-22) | (i) Estimated value <br> (ii) Exact value | 1 | Must be all correct |
| 23. (9ME4-22) | 17.9 | 1 |  |
| 24. | The sum of the number of red marbles and yellow marbles is | 1 |  |
| 25. | $2 y^{2}-5 y+3$ | 1 | Expansion |
| 26. | $(k+2)(x-y)$ | 1 | Factorization |
| 27. | $(x+4)(x-1)$ | 1 | Factorization |
| 28. | $x=3$ | 1 |  |
| 29. | $16-x^{2}$ | 1 | Expansion |
| 30. (9ME2-30) | $\frac{3}{4 a}$ | 1 | In simplest form |
| 31. (9ME2-31) | (i) $\sqrt{2}$ $\square$ $\sqrt{3}$ <br> (ii) $\frac{1}{\sqrt{3}}$ $\square$ $\frac{1}{\sqrt{2}}$ | 1 | Must be all correct |
| 32. | $C E / E C / D E / E D$ | 1 |  |
| 33. |  | 1 | Pyramid with triangular base |
| 34. (9ME4-36) | $x=80$ | 1 |  |
| 35. | $B, ~ C$ | 1 | Must be all correct |
| 36. | $x=130$ | 1 |  |


| Question <br> Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 37. | $\angle D B F / \angle F B D$ | 1 |  |
| 38. | The coordinates of $\boldsymbol{A}^{\prime}$ are $(-3,-3)$. | 1 | Must be all correct |
| 39. (9ME2-39) | The coordinates of the mid-point of line segment $A B$ are $(0,2)$. | 1 |  |
| 40. | $x=7.51$ | 1 |  |
| 41. (9ME4-41) | Arithmetic mean of the inflation rates $=3.5 \%$ <br> Median of the inflation rates $=3 \%$ | $\begin{aligned} & 1(41-1) \\ & 1(41-2) \end{aligned}$ |  |
| 42. (9ME3-41) | The weighted mean mark that David got is 16.5 . | 1 |  |
| 43. | The empirical probability that Paul predicted correctly is $\qquad$ 1. . | 1 | or 100\% |

Section C - Sub-paper 1 (9ME1)


| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 48. | $\begin{aligned} & \text { Length of } \overparen{A B} \\ = & \left(\frac{85^{\circ}}{360^{\circ}}\right)(2)(22) \pi \\ \approx & 32.637657 \\ = & 32.6 \mathrm{~cm} \text { (corr. to } 3 \text { sig. fig.) } \end{aligned}$ | $\begin{gathered} 1(48-1) \\ \\ 1^{*}(48-2) \\ 1^{* *}(48-3) \end{gathered}$ | r.t. 32.6 |
| 49. | $\begin{aligned} & \tan 70^{\circ}=\frac{B C}{2.3} \\ & \therefore B C=6.3 \end{aligned}$ <br> $\therefore$ The height of wall is 6.3 m . | $\begin{gathered} 1(49-1) \\ 1^{*}(49-2) \\ 1^{* *}(49-3) \end{gathered}$ | r.t. 6.3 |
| 50. <br> (9ME2-50) | (a) <br> (b) Positive relationship | 1 (50a) $1 \text { (50b) }$ | For the correct indication of all marks Zero mark obtained if points are connected by line segments. <br> Or other reasonable answers |
| 51. (9ME2-51) | (a) 10 players are shorter than 160.5 cm . <br> (b) $\underline{6}$ players whose heights are between 150.5 cm and 155.5 cm . <br> (c) James' height should belong to the class interval $\underline{166} \mathrm{~cm}-\underline{170} \mathrm{~cm}$. | $\begin{aligned} & 1 \text { (51a) } \\ & 1 \text { (51b) } \\ & 1 \text { (51c) } \end{aligned}$ | Must be all correct |

## 9ME1



# Education Bureau <br> Territory-wide System Assessment 2011 <br> Secondary 3 Mathematics <br> Marking Scheme 

Note (for Section B and C of each sub-paper):
*Mark for Answer:
(1) The Mark for Answer may be given when there is a correct answer without any work shown.
(2) If the work shown is incorrect, the Mark for Answer will not be given.
(3) If the work shown is poorly presented but there is a correct answer, the Mark for Answer may be given.
**Mark for Presentation:
(1) If the work shown is correct but the answer is incorrect, the Mark for Presentation may be given.
(2) If the work shown is incorrect, the Mark for Presentation will not be given.
(3) If the numerical value of the answer is correct but not the approximate value as required by the question, the Mark for Presentation will not be given.
(4) The Mark for Presentation may include overall work such as mathematical expressions, units, written explanations, usage of symbol, etc.
r.t. $x x x$ means "accept answers which can be rounded to $x x x$ " .

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

Section A - Sub-paper 2 (9ME2) (1 mark each)

1. A (9MEl-1)
2. D (9ME1-2)
3. C (9мез-1)
4. A (9ме3-3)
5. A (9ME4-4)
6. B
7. D
8. C
9. B
10. D
11. C (9ME1-11)
12. B (9MEl-12)
13. B (9МЕЗ-13)
14. A
15. C (9ME4-14)
16. D (9МЕЗ-17)
17. C
18. D
19. B (9ME4-19)
20. A

Section B - Sub-paper 2 (9ME2)

| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 21. (9ME1-21) | (i) $+200 / 200$ <br> (ii) -50 | 1 | Must be all correct |
| 22. (9ME1-22) | (i) Estimated value <br> (ii) Exact value | 1 | Must be all correct |
| 23. (9ME3-23) | The diameter of the cross section of an optical fibre is about $6.5 \times 10^{-5} \mathrm{~m}$. | 1 |  |
| 24. (9ME4-24) | (i) Rate <br> (ii) Ratio | 1 | Must be all correct |
| 25. | $y=\frac{x}{3}+4$ | 1 | Or $\quad$ other equivalent equations E.g. $\quad x=3(y-4)$ |
| 26. | The number of terms of the polynomial is 4 $\qquad$ . | 1 |  |
| 27. | $a^{3} b+a b^{2}-2 a b$ | 1 | Expansion |
| 28. | $(2-3 x)(2+3 x)$ | 1 | Factorization |
| 29. | $(3 x+1)(x+3)$ | 1 | Factorization |
| 30. (9ME1-30) | $\frac{3}{4 a}$ | 1 | In simplest form |
| 31. (9ME1-31) | (i) $\sqrt{2}$ $<$ $\square$ $\sqrt{3}$ <br> (ii) $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{2}}$ | 1 | Must be all correct |
| 32. (9ME3-32) | $x \geq 0$ | 1 |  |
| 33. (9ME3-33) | The radius of the circle is $\quad 6 \mathrm{~cm}$. | 1 |  |
| 34. (9ME4-33) | The volume of the sphere is $3054 \mathrm{~cm}^{3}$. | 1 |  |


| Question <br> Number | Suggested Answers | Marks | Notes |
| :--- | :--- | :--- | :--- |
| 35. | ALL axes of |  |  |

Section C - Sub-paper 2 (9ME2)

| Question <br> Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 44. <br> (9ME1-44) | $\begin{aligned} \text { Discount } & =12000 \times 15 \% \\ & =1800 \end{aligned}$ <br> $\therefore$ The discount is \$ 1800 . | $\begin{gathered} 1(44-1) \\ 1^{*}(44-2) \\ 1^{* *}(44-3) \end{gathered}$ |  |
| 45. <br> (9ME3-49) | Method 1 <br> The area of quadrilateral $A B C D$ $\begin{aligned} & =\frac{6 \times 4}{2}+\frac{6 \times 3}{2} \\ & =21 \end{aligned}$ <br> $\therefore$ The area of quadrilateral $A B C D$ is 21 square units. <br> Method 2 $\begin{aligned} & =\text { The area of quadrilateral } A B C D \\ & = \\ & =6 \times 7-\frac{3 \times 4}{2}-\frac{3 \times 4}{2}-\frac{3 \times 4}{2}-\frac{3 \times 2}{2} \\ & = \\ & \therefore 1 \\ & \therefore \text { The area of quadrilateral } A B C D \text { is } 21 \text { square units. } \end{aligned}$ | $\begin{gathered} 1(45-1) \\ 1^{*}(45-2) \\ 1^{* *}(45-3) \\ 1(45-1) \\ 1^{*}(45-2) \\ 1^{* *}(45-3) \end{gathered}$ | For $\frac{6 \times 4}{2}$ or $\frac{6 \times 3}{2}$ <br> For any 2 correct areas of triangles |
| 46. <br> (9ME4-51) | $\triangle O A B$ is a right-angled triangle. $\begin{aligned} O B^{2} & =O A^{2}+A B^{2} \\ & =0.7^{2}+2.4^{2} \\ & =6.25 \end{aligned}$ $\therefore O B=2.5 \mathrm{~km}$ <br> $\therefore$ The distance between point $O$ and point $B$ is 2.5 km. | $\begin{gathered} 1(46-1) \\ 1^{*}(46-2) \\ 1^{* *}(46-3) \end{gathered}$ |  |
| 47. | $\begin{aligned} & x^{12}\left(\frac{y}{x}\right)^{3} \\ = & x^{12} \cdot \frac{y^{3}}{x^{3}} \\ = & x^{12-3} y^{3} \\ = & x^{9} y^{3} \end{aligned}$ | $\begin{aligned} & 1(47-1) \\ & 1(47-2) \\ & 1^{*}(47-3) \end{aligned}$ | Using $\left(\frac{y}{x}\right)^{k}=\frac{y^{k}}{x^{k}}$ <br> Using $\frac{x^{m}}{x^{n}}=x^{m-n}$ <br> Correct final answer (getting marks 111 ) |



| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 50. <br> (9MC1-50) | (a) <br> The test marks of 8 students in Mathematics and Science <br> (b) Positive relationship | 1 (50a) <br> 1 (50b) | For the correct indication of all marks <br> Zero mark obtained if points are connected by line segments. <br> Or other reasonable answers |
| 51. (9ME1-51) | (a) 10 players are shorter than 160.5 cm . <br> (b) 6 players whose heights are between 150.5 cm and 155.5 cm . <br> (c) James' height should belong to the class interval $166 \mathrm{~cm}-170 \mathrm{~cm}$. | $\begin{aligned} & \hline 1 \text { (51a) } \\ & 1 \text { (51b) } \\ & 1 \text { (51c) } \end{aligned}$ | Must be all correct |
| 52. | Range : 1250 mL to 1750 mL <br> The height of the tank is about 6 times the length of AB. $\therefore \text { Capacity } \approx(250 \times 6) \mathrm{mL}=1500 \mathrm{~mL}$ | $\begin{aligned} & 1(52-1) \\ & 1(52-2) \end{aligned}$ | Have some explanation Reasonable explanation |

# Education Bureau <br> Territory-wide System Assessment 2011 <br> Secondary 3 Mathematics <br> Marking Scheme 

Note (for Section B and C of each sub-paper):
*Mark for Answer:
(1) The Mark for Answer may be given when there is a correct answer without any work shown.
(2) If the work shown is incorrect, the Mark for Answer will not be given.
(3) If the work shown is poorly presented but there is a correct answer, the Mark for Answer may be given.
**Mark for Presentation:
(1) If the work shown is correct but the answer is incorrect, the Mark for Presentation may be given.
(2) If the work shown is incorrect, the Mark for Presentation will not be given.
(3) If the numerical value of the answer is correct but not the approximate value as required by the question, the Mark for Presentation will not be given.
(4) The Mark for Presentation may include overall work such as mathematical expressions, units, written explanations, usage of symbol, etc.
r.t. $x x x$ means "accept answers which can be rounded to $x x x$ " .

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

Section A - Sub-paper 3 (9ME3) (1 mark each)

1. C (9ME2-3)
2. C
3. A (9ME2-4)
4. A
5. D (9ME4-5)
6. B
7. B
8. A
9. D
10. B
11. C
12. A
13. B (9ME2-13)
14. D
15. A (9ME4-15)
16. D
17. D (9ME2-16)
18. C
19. B
20. C

Section B - Sub-paper 3 (9ME3)

| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 21. | $\begin{aligned} & A=-3 \\ & B=-1 \\ & C=2 \\ & C=+2 \\ & \hline \end{aligned}$ | 1 | Must be all correct |
| 22. | The amount is \$ 4320 | 1 |  |
| 23. (9ME2-23) | The diameter of the cross section of an optical fibre is about $6.5 \times 10^{-5} \mathrm{~m}$. | 1 |  |
| 24. | Figure $n$ is formed by $\underbrace{n+2}$ dots. | 1 |  |
| 25. (9ME4-25) | $n=18$ | 1 |  |
| 26. | $6 x^{2}-12 x y /-12 x y+6 x^{2}$ | 1 | Expansion |
| 27. | $(x-1)(2 x-1)(3 x+2)$ | 1 | Factorization |
| 28. | $G$ and $H$ | 1 | Accept $G\left(2,-\frac{2}{3}\right)$ and $H(4,0) /$ <br> $\left(2,-\frac{2}{3}\right)$ and $(4,0)$ <br> Must be all correct |
| 29. | $9 x^{2}+30 x+25$ | 1 |  |
| 30. | $a=3$ | 1 |  |
| 31. | The curved surface area of the cone is $260 \pi \mathrm{~cm}^{2}$. | 1 |  |
| 32. (9ME2-32) | $x \geq 0$ | 1 |  |
| 33. (9ME2-33) | The radius of the circle is $\underline{6}^{\text {cm }} \mathrm{cm}$. | 1 |  |
| 34. (9ME4-34) | A, F | 1 | Must be all correct |
| 35. | (a) $x=30$ <br> (b) $y=12$ | $\begin{aligned} & 1(35 a) \\ & 1(35 b) \end{aligned}$ |  |


| Question <br> Number | Suggested Answers | Marks | Notes |
| :--- | :--- | :---: | :---: |
| 36. | $B E / \boxed{E B}$ | 1 |  |
| 37. | The angle between the inclined <br> plane $A B H E$ and the horizontal <br> plane $A B C D$ is $\angle C B H$. | 1 | or $\angle H B C /$ <br> $\angle D A E / \angle E A D$ |
| 38. | $x=65$ | 1 |  |
| 39. | $x=62$ | 1 |  |
| 40. | $\theta=66.9^{\circ}$ | 1 |  |
| 41. (9ME1-42) | The weighted mean mark that <br> David got is 16.5. | 1 |  |
| 42. (9ME2-42) | (4) $\rightarrow(2) \rightarrow(3) \rightarrow(1)$ | 1 |  |
| 43. (9ME2-43) | The mean training hours of the <br> members last week is 8.9 . | 1 |  |

$$
\text { Section C - Sub-paper } 3 \text { (9ME3) }
$$



| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 48. <br> (9ME2-48) | $x$ -2 0 2 <br> $y$ -3 -1 1 | $\begin{aligned} & \hline 1(48-1) \\ & 1(48-2) \\ & \\ & \\ & 1 *(48-3) \end{aligned}$ | Must be all correct <br> In case the data in the above table is incorrect, student can still use the ordered pairs to draw a straight line. $(2,1)$ must lie on the line and the range of value of $x$ must include -2 to 2. <br> Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend in two ends of the line) <br> If the data in the table is correct but not complete and the graph is correct, $(0,1,1)$ can be given |
| 49. <br> (9ME2-45) | Method 1 <br> The area of quadrilateral $A B C D$ $\begin{aligned} & =\frac{6 \times 4}{2}+\frac{6 \times 3}{2} \\ & =21 \end{aligned}$ <br> $\therefore$ The area of quadrilateral $A B C D$ is 21 square units. <br> Method 2 $\begin{aligned} & \text { The area of quadrilateral } A B C D \\ = & 6 \times 7-\frac{3 \times 4}{2}-\frac{3 \times 4}{2}-\frac{3 \times 4}{2}-\frac{3 \times 2}{2} \\ = & 21 \end{aligned}$ <br> $\therefore$ The area of quadrilateral $A B C D$ is 21 square units. | $\begin{gathered} 1(49-1) \\ 1^{*}(49-2) \\ 1^{* *}(49-3) \\ 1(49-1) \\ 1^{*}(49-2) \\ 1^{* *}(49-3) \end{gathered}$ | For $\frac{6 \times 4}{2}$ or $\frac{6 \times 3}{2}$ <br> For any 2 correct areas of triangles |
| 50. <br> (9ME4-50) | (a) $k=\frac{A}{\pi r}-r / k=\frac{A-\pi r^{2}}{\pi r}$ <br> (b) $\begin{aligned} & k=\frac{90 \pi}{5 \pi}-5 \\ & k=13 \end{aligned}$ | $\begin{aligned} & 1^{*}(50 a) \\ & 1(50 b-1) \\ & 1^{*}(50 b-2) \end{aligned}$ | Correct methods |


| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 51. <br> (9ME2-49) | (a) $\begin{aligned} \text { Weight of rice } & =20-8 \\ & =12 \end{aligned}$ <br> $\therefore \quad$ The weight of sand : The weight of rice $\begin{aligned} & =8: 12 \\ & =2: 3 \end{aligned}$ <br> (b) Method 1: $\begin{aligned} 5: 6 & =5 \times 2: 6 \times 2 \\ & =10: 12 \end{aligned}$ <br> $\therefore \quad$ Amount of sand required $=10-8$ $=2 \mathrm{~g}$ <br> Method 2: <br> Let $x \mathrm{~g}$ be the amount of sand required. $\begin{aligned} & (8+x): 12=5: 6 \\ & \frac{8+x}{12}=\frac{5}{6} \\ & 48+6 x=60 \\ & x=2 \end{aligned}$ <br> $\therefore \quad$ Amount of sand required is 2 g . | $\begin{aligned} & 1(51 \mathrm{a}-1) \\ & 1^{*}(51 \mathrm{a}-2) \\ & 1 \text { (51b-1) } \\ & 1^{*}(51 \mathrm{~b}-2) \\ & 11(51 \mathrm{~b}-1) \\ & 1^{*}(51 \mathrm{~b}-2) \\ & 1^{* *}(51-5) \end{aligned}$ | Can be absorbed in the next step <br> For any correct methods |
| 52. | The total amount of the gifts should not be estimated by rounding up since whether the actual amount is $\$ 300$ or above cannot be guaranteed. <br> $\therefore$ Jack's estimation is not reasonable. <br> OR $\frac{\$ 74.3 \times 4<\$ 75 \times 4}{-\$ 300}$ <br> The total amount is less than $\$ 300$. <br> $\therefore$ Jack's estimation is not reasonable. | $\begin{aligned} & \hline 1 \text { (52-1) } \\ & 1 \text { (52-2) } \\ & 1(52-1) \\ & 1(52-2) \end{aligned}$ | Reasonable explanation <br> Have some explanation <br> Reasonable explanation <br> Have some explanation |

# Education Bureau <br> Territory-wide System Assessment 2011 <br> Secondary 3 Mathematics <br> Marking Scheme 

Note (for Section B and C of each sub-paper):
*Mark for Answer:
(1) The Mark for Answer may be given when there is a correct answer without any work shown.
(2) If the work shown is incorrect, the Mark for Answer will not be given.
(3) If the work shown is poorly presented but there is a correct answer, the Mark for Answer may be given.
**Mark for Presentation:
(1) If the work shown is correct but the answer is incorrect, the Mark for Presentation may be given.
(2) If the work shown is incorrect, the Mark for Presentation will not be given.
(3) If the numerical value of the answer is correct but not the approximate value as required by the question, the Mark for Presentation will not be given.
(4) The Mark for Presentation may include overall work such as mathematical expressions, units, written explanations, usage of symbol, etc.
r.t. $x x x$ means "accept answers which can be rounded to $x x x$ " .

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

Section A - Sub-paper 4 (9ME4) (1 mark each)

1. B
2. A (9ME1-3)
3. A
4. A (9ME2-5)
5. D (9ME3-5)
6. D
7. B
8. C
9. C
10. B
11. D
12. B (9ME1-13)
13. C
14. C (9ME2-15)
15. A (9МЕЗ-15)
16. C
17. D
18. D
19. B (9ME2-19)
20. A

Section B - Sub-paper 4 (9ME4)

| Question <br> Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 21. | 4 | 1 |  |
| $22 .$ <br> (9ME1-23) | 17.9 | 1 |  |
| 23. |  <br> (Acceptable range: $-2.5<-\sqrt{5}<-2$ ) | 1 |  |
| 24. (9ME2-24) | (i) Rate <br> (ii) Ratio | 1 | Must be all correct |
| $25 .$ <br> (9ME3-25) | $n=18$ | 1 |  |
| 26. | $x=-29, y=-38$ | 1 | Must be all correct |
| 27. | The value of the $5^{\text {th }}$ term of the sequence is $-\frac{1}{2}-0.5$. | 1 |  |
| 28. | $-3 x^{2}+5 x / 5 x-3 x^{2}$ | 1 | Simplification |
| 29. | $(3 x+2)^{2} /(3 x+2)(3 x+2)$ | 1 | Factorization |
| 30. | $x=2$ | 1 |  |
| 31. | $x<4$ | 1 |  |
| 32. |  | 1 |  |
| 33. <br> (9ME2-34) | The volume of the sphere is $3054 \mathrm{~cm}^{3}$. | 1 |  |
| 34. <br> (9ME3-34) | A, F | 1 | Must be all correct |
| 35. | 6 | 1 |  |
| 36. <br> (9ME1-34) | $x=80$ | 1 |  |
| 37. | $x=65$ | 1 |  |
| 38. | $x=25$ | 1 |  |


| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 39. | Slope of $L$ is $-\frac{7}{10} /-0.7$. | 1 |  |
| 40. | (1) angle of elevation <br> (2) $20^{\circ}$ | 1 | Must be all correct |
| 41. (9ME1-41) | Arithmetic mean of the inflation rates $=3.5 \%$ <br> Median of the inflation rates $=3 \%$ | $\begin{aligned} & 1(41-1) \\ & 1(41-2) \end{aligned}$ |  |
| 42. | The modal class of the weights of these 50 newborn babies is $\qquad$ <br> 3.5 <br> kg - $\qquad$ 4.4 kg. | 1 |  |
| 43. | $\frac{1}{4} / 0.25$ | 1 |  |

Section C - Sub-paper 4 (9ME4)

| Question <br> Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 44. | The selling price of the model car $\begin{aligned} & =\$ 80(1+60 \%) \\ & =\$ 128 \end{aligned}$ | $\begin{gathered} 1(44-1) \\ 1^{*}(44-2) \\ 1^{* *}(44-3) \end{gathered}$ |  |
| 45. <br> (9MEl-45) | $\begin{aligned} & 45000 \times(1+10 \%)^{3} \\ = & 59895 \end{aligned}$ <br> The annual car sales of WIND Motor in 2013 are 59895. <br> OR <br> The annual car sales of WIND Motor in 2013 are 59895. | $\begin{gathered} 1(45-1) \\ 1^{*}(45-2) \\ 1^{* *}(45-3) \\ 1(45-1) \\ 1^{*}(45-2) \\ 1^{* * *}(45-3) \end{gathered}$ | Correct method (multiply 1.1 three times) |
| 46. | $\left.\left.\left.\begin{array}{l} \left\{\begin{array}{l} 2 x+5 y=18 \\ 2 x-3 y=2 \end{array}\right. \\ (1)-(2):(1) \\ 8 y=16 \end{array}\right\} \begin{array}{l} y=2 \end{array}\right\} \begin{array}{l} \text { Substitute } \quad y=2 \text { into }(2) \\ 2 x-3(2)=2 \end{array}\right\} \begin{aligned} & x=4 \end{aligned}$ | $\begin{aligned} & 1(46-1) \\ & 1^{*}(46-2) \\ & 1(46-3) \\ & 1^{*}(46-4) \end{aligned}$ | Method (eliminating one of the variables) <br> First correct root (either $x$ or $y$ ) <br> Method (using the value of the first root to get the second root) <br> Both roots are the correct answers |
| 47. | $\begin{aligned} \pi \times r^{2} \times 15 & =240 \pi \\ r & =4 \end{aligned}$ | $\begin{gathered} 1(47-1) \\ 1^{*}(47-2) \end{gathered}$ | Using correct method |


| Question Number | Suggested Answers |  |  |  | Marks | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 48. <br> (9ME1-47) |  <br> The total surface area of the pyramid $\begin{aligned} & =\frac{(10)(12)}{2} \times 4+(10)(10) \\ & =340 \mathrm{~cm}^{2} \end{aligned}$ <br> (a) $k=\frac{A}{\pi r}-r / k=\frac{A-\pi r^{2}}{\pi r}$ <br> (b) $k=\frac{90 \pi}{5 \pi}-5$ $k=13$ |  |  |  | 1 (48-1) | Must be all correct |
|  |  |  |  |  |  |  |
|  |  |  |  |  | $1(48-2)$ | In case the data in the above table is incorrect, student can still use the ordered pairs to draw a straight line. The line must pass through $(0,3)$ and the range of value of $x$ must include -2 to 2 . <br> Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend in two ends of the line) <br> If the data in the table is correct but not complete and the graph is correct, $(0,1,1)$ can be given |
| 49. |  |  |  |  | $\begin{gathered} 1(49-1) \\ 1^{*}(49-2) \\ 1^{* *}(49-3) \end{gathered}$ | Other correct methods |
| 50. <br> (9ME3-50) |  |  |  |  | $\begin{aligned} & 1^{*}(50 a) \\ & 1^{(50 b-1)} \\ & 1^{*}(50 b-2) \end{aligned}$ | Correct methods |


| Question Number | Suggested Answers | Marks | Notes |
| :---: | :---: | :---: | :---: |
| 51. <br> (9ME2-46) | $\triangle O A B$ is a right-angled triangle. $\begin{aligned} O B^{2} & =O A^{2}+A B^{2} \\ & =0.7^{2}+2.4^{2} \\ & =6.25 \end{aligned}$ $\therefore O B=2.5 \mathrm{~km}$ <br> $\therefore$ The distance between point $O$ and point $B$ is 2.5 km . | $\begin{gathered} 1(51-1) \\ 1^{*}(51-2) \\ 1^{* *}(51-3) \end{gathered}$ |  |
| 52. | The arithmetic mean is easily affected by the 2 extreme values. <br> OR <br> There are 13 donors whose donations are less than \$200. <br> OR <br> There are only 2 donors whose donations are more than $\$ 200$. <br> $\therefore$ I disagree with Mary's claim. | $\begin{aligned} & 1(52-1) \\ & 11_{(52-1)} \\ & 11_{(52-1)} \\ & 1(52-2) \end{aligned}$ | Reasonable explanation <br> Reasonable explanation <br> Reasonable explanation <br> Have some explanation |

