Education and Manpower Bureau
Territory-wide System Assessment 2006
Secondary 3 Mathematics
Marking Scheme

| Question <br> No. | Answers | Marks | Remarks |
| :---: | :--- | :---: | :--- |
| 1 | C | 1 |  |
| 2 | D | 1 |  |
| 3 | B | 1 |  |
| 4 | C | 1 |  |
| 5 | B | 1 |  |
| 6 | C | 1 |  |
| 7 | C | 1 |  |
| 8 | B | 1 |  |
| 9 | A | 1 |  |
| 10 | D | 1 |  |
| 11 | D | 1 |  |
| 12 | B | 1 |  |
| 13 | B | 1 |  |
| 14 | A | 1 |  |
| 15 | A | 1 |  |
| 16 | C | 1 |  |
| 17 | C | 1 |  |
| 18 | A | 1 |  |
| 19 | A | 1 |  |
| 20 | D | 1 |  |
| 21 | D | 1 |  |
| 22 | (i) 0 | 1 | Must be all correct |
| (ii) +500 |  |  |  |
| (iii) -100 | $7 \times 10^{8}$ | 1 |  |
| 23 | (i) Rate | (ii) Ratio | 1 |
| 25 | $y-x=400$ | Must be all correct |  |
|  |  | Accept equivalent equations <br> e.g.: $x+400=y$ |  |


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| :---: | :---: | :---: | :---: |
| 26 | 78 | 1 |  |
| 27 | $9 x^{2}-x$ | 1 | Accept $-x+9 x^{2}, x(9 x-1)$, etc. |
| 28 | $a^{8}$ | 1 |  |
| 29 | $(x+3)(x+4)$ | 1 | Accept $(x+4)(x+3),(4+x)(3+x)$, etc. |
| 30 | -2 | 1 |  |
| 31 | $\frac{y}{4 x}$ | 1 |  |
| 32 | $x \geq 10$ | 1 | Accept $x-10 \geq 0$, etc. |
| 33 |  | 1 | 1 mark for solid lines $B C, C D, C F$ and dotted lines $A H, E H, G H$. Must be all correct. |
| 34 | 4 | 1 |  |
| 35 | $x=\underline{10} \quad, y=\underline{16}$ | 1 | Must be all correct |
| 36 | 55 | 1 |  |
| 37 | 32 | 1 |  |
| 38 | $L_{1}, L_{4}$ | 1 | Must be all correct, order of arrangement is not important |
| 39 | $(1,2)$ | 1 |  |
| 40 | $38.7^{\circ}$ | 1 |  |
| 41(a) | $3,10,24,19,17,7$ respectively | 1 | Must be all correct |
| 41(b) | 13 | 1 |  |
| 41(c) | 71-80 | 1 | Accept 70.5-80.5 |
| 42 | $\frac{83}{200} / 0.415$ | 1 | Accept 41.5\% |
| 43 | Peter's answer is reasonable. $\begin{aligned} \because \quad & 4992 \div 4.8 \\ \approx & 5000 \div 5 \\ = & 1000 \end{aligned}$ | 1 1 | Mark given only when the justification is given <br> 1 mark for justification <br> Other reasonable justifications are also acceptable |



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| 47(a) | $\begin{aligned} & \text { Circumference }=2 \pi r \\ & 2 \pi r=10 \pi \\ & \quad r=5 \end{aligned}$ | $\begin{gathered} 1 \\ 1^{*} \end{gathered}$ | Method mark: other correct methods are also acceptable <br> Answer mark (*please see remarks below) |
| 47(b) | Area of the circular flower-bed $\begin{aligned} & =\pi r^{2} \\ & =\pi(5)^{2} \mathrm{~m}^{2} \\ & =25 \pi \quad \mathrm{~m}^{2} \end{aligned}$ | $\begin{gathered} 1 \\ 1^{*} \\ 1^{* *} \end{gathered}$ | Method mark: other correct methods are also acceptable <br> Answer mark (*please see remarks below) <br> Presentation mark (** please see remarks below) <br> 1 mark for part (a) and part (b) |
| 48 | Let $x \mathrm{~m}$ be the length of the signboard. $\begin{array}{r} x^{2}+0.8^{2}=1.7^{2} \\ x=1.5 \end{array}$ <br> The length of the signboard is 1.5 m . <br> OR <br> The length of the signboard $\begin{aligned} & =\sqrt{1.7^{2}-0.8^{2}} \mathrm{~m} \\ & =1.5 \mathrm{~m} \end{aligned}$ | $\begin{gathered} 1 \\ 1^{*} \\ 1^{* *} \end{gathered}$ | Method mark: other correct methods are also acceptable <br> Answer mark (*please see remarks below) <br> Presentation mark (** please see remarks below) |
| 49 | $\begin{aligned} 6 x+60 & =180 \\ x & =20 \end{aligned}$ <br> OR $\begin{aligned} x+100+60 & =180 \\ x & =20 \end{aligned}$ <br> OR $\begin{aligned} 6 x & =x+100 \\ x & =20 \end{aligned}$ | $\begin{gathered} 1 \\ 1^{*} \end{gathered}$ | Method mark: other correct methods are also acceptable Answer mark (*please see remarks below) |


| Question No. | Answers |  |  | Marks | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 50 | Table 1 |  |  | 1 | All frequencies in Table 1 must be correct |
|  | Number of correct answers | Tally | Frequency |  |  |
|  | 0-14 | HH1 | 6 |  |  |
|  | 15-29 | HH1 | 6 |  |  |
|  | 30-44 | HH1 | 6 |  |  |
|  | Table 2 |  |  |  |  |
|  | Number of correct answers | Tally | Frequency |  |  |
|  | 0-8 | // | 2 | 1 | All frequencies in Table 2 must be correct |
|  | 9-17 | //// | 4 |  |  |
|  | 18-26 | HHE | 5 |  |  |
|  | 27-35 | /I/I | 4 | 1 | Tallies correspond with frequencies in Table 1 and 2. |
|  | 36-44 | /// | 3 |  |  |
| 51 | No. |  |  | 1 | Mark given only when reasons are given. |
|  | The overall percentage increase of the total cost should be considered. |  |  | 1 | 1 mark for correct reason |
|  | OR |  |  |  | Other correct reasons are also acceptable |
|  | No. Percentage increase |  |  |  |  |
|  | $\begin{aligned} & =\frac{800+200}{} \\ & =12 \% \end{aligned}$ |  |  |  |  |

Remarks: *Answer mark - (1) Just the correct answer without showing mathematical expression, award the answer mark.
(2) Mathematical expression is incorrect, do not award the answer mark.
(3) Poor presentation in the mathematical expression or workings but correct answer given, award the answer mark.
**Presentation mark: (1) Mathematical expression is correct, but wrong answer given, award the presentation mark.
(2) Mathematical expression is incorrect, do not award the presentation mark.
(3) Presentation mark includes holistic assessment of mathematical expression, units (missing unit or wrong unit), explanation, statement/conclusion and use of symbols, etc.

