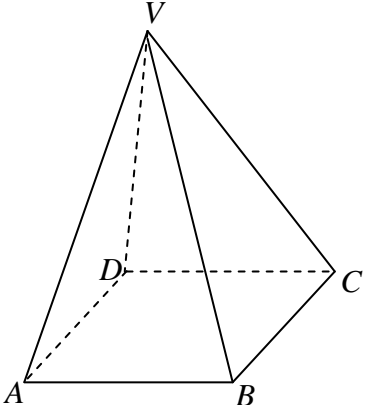


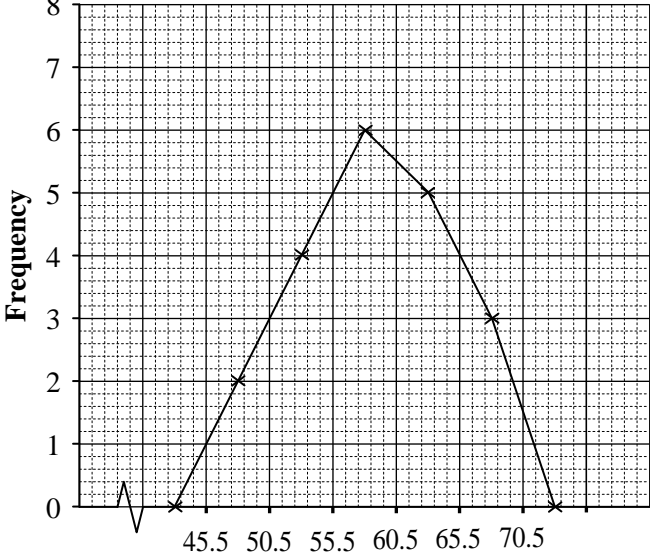
**Education and Manpower Bureau**  
**Territory-wide System Assessment 2007**  
**Secondary 3 Mathematics**  
**Marking Scheme**

Question No.	Correct answer	Marks	Remarks
1.	A	1	
2.	A	1	
3.	B	1	
4.	D	1	
5.	B	1	
6.	D	1	
7.	C	1	
8.	D	1	
9.	A	1	
10.	C	1	
11.	D	1	
12.	B	1	
13.	B	1	
14.	D	1	
15.	C	1	
16.	C	1	
17.	B	1	
18.	D	1	
19.	A	1	
20.	(i) +3 (ii) 0 (iii) -2	1	Mark given only when all answers are correct.
21.	$1.2 \times 10^5$	1	
22.	(i) Ratio (ii) Rate	1	Mark given only when both answers are correct.
23.	$100 - 18x$	1	Accept equivalent algebraic expressions
24.	541	1	
25.	1	1	Acceptable answer: +1

Question No.	Correct answer	Marks	Remarks
26.	$4xy - 3y$	1	Acceptable answers: $-3y + 4xy$ , $y(4x - 3)$ , etc.
27.	$x^6$	1	
28.	$(3x + 1)^2$	1	
29.	$-2$	1	
30.	42	1	
31.	$\frac{15x}{y}$	1	
32.	$x < 12$	1	
33.	23	1	
34.	8.1	1	
35.		1	1 mark for the solid line $VB$ and the dotted lines $DA$ and $DV$ .
36.	63	1	
37.	62	1	
38.	$ADHG$	1	Acceptable answers: $DHGA$ , $AGHD$ etc. No mark for answers such as $AHDG$ , $ADGH$ , etc.
39.	$(\underline{2}, \underline{300^\circ})$	1	Both answers must be correct.
40.	$(\underline{4}, \underline{-3})$	1	
41(a).	July	1	
41(b).	600	1	
41(c).	Mar / March	1	
42.	1.6	1	
43.	Carl's estimation is NOT reasonable.	1	Mark given only when the explanation is given.
	To estimate whether there was enough money, the	1*	1 mark for justification

Question No.	Correct answer	Marks	Remarks
	<p>costs should be rounded up.</p> <p>OR</p> <p>Carl's estimation is NOT reasonable.</p> <p><math>\therefore</math> The total cost  <math>\approx \\$85 \times 6</math>  <math>&gt; \\$500</math></p> <p><math>\therefore</math> Carl underestimated the total cost.</p>	<p>1</p> <p>1*</p>	<p>(Accept any other reasonable justifications)</p> <p>Mark given only when the explanation is given.</p> <p>1 mark for justification (Accept any other reasonable justifications)</p>
44.	<p>Present value of the car</p> <p><math>= \\$120\,000 \times (1 - 15\%)^3</math></p> <p><math>= \\$73\,695</math></p>	<p>1</p> <p>1*</p> <p>1**</p>	<p>Accept any other correct working</p> <p>1 mark for answer</p> <p>1 mark for literal expression / unit / presentation</p>
45.	$\begin{cases} x = 2y & \dots(1) \\ x - y + 3 = 0 & \dots(2) \end{cases}$ <p>Sub (1) into (2),</p> $2y - y + 3 = 0$ $y = -3$ <p>Sub <math>y = -3</math> into (1),</p> $x = 2(-3)$ $= -6$ <p><math>\therefore x = -6</math> and <math>y = -3</math></p>	<p>1</p> <p>1*</p> <p>1*</p>	<p>*Accept the method of substitution or the method of elimination.</p> <p>1 mark for correct value of <math>y</math></p> <p>1 mark for correct value of <math>x</math></p>

Question No.	Correct answer	Marks	Remarks
46.	Area of $ABQP$ $= \left[ \pi(20)^2 \times \frac{120^\circ}{360^\circ} - \pi(13)^2 \times \frac{120^\circ}{360^\circ} \right] \text{ cm}^2$ $= 241.9 \text{ cm}^2$	1   1*  1**	1 mark for substituting values of $r$ and $\theta$ into the formula to calculate the area of sector   1 mark for answer  1 mark for literal presentation / unit / presentation
47.	Distance $= \sqrt{15^2 + 8^2} \text{ km}$ $= 17 \text{ km}$	1   1*  1**	Accept any other correct working   1 mark for answer  1 mark for literal presentation / unit / presentation
48.	$x + 8 = 42$ $x = 34$	1  1*	Accept any other correct working  1 mark for answer

Question No.	Correct answer	Marks	Remarks																														
49.	<p style="text-align: center;"><b>Table 1</b></p> <table border="1" data-bbox="234 383 751 636"> <thead> <tr> <th>Height (cm)</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>51 – 100</td> <td>###  </td> <td>6</td> </tr> <tr> <td>101 – 150</td> <td>###   </td> <td>7</td> </tr> <tr> <td>151 – 200</td> <td>###   </td> <td>7</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Table 2</b></p> <table border="1" data-bbox="234 732 762 1115"> <thead> <tr> <th>Height (cm)</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>51 – 80</td> <td>  </td> <td>2</td> </tr> <tr> <td>81 – 110</td> <td>////</td> <td>4</td> </tr> <tr> <td>111 – 140</td> <td>###   </td> <td>7</td> </tr> <tr> <td>141 – 170</td> <td>###</td> <td>5</td> </tr> <tr> <td>171 – 200</td> <td>  </td> <td>2</td> </tr> </tbody> </table>	Height (cm)	Tally	Frequency	51 – 100	###	6	101 – 150	###	7	151 – 200	###	7	Height (cm)	Tally	Frequency	51 – 80		2	81 – 110	////	4	111 – 140	###	7	141 – 170	###	5	171 – 200		2	<p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p>	<p>All frequencies in Table 1 must be correct.</p> <p>All frequencies in Table 2 must be correct.</p> <p>Tallies correspond with frequencies in Table 1 and Table 2.</p>
Height (cm)	Tally	Frequency																															
51 – 100	###	6																															
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Height (cm)	Tally	Frequency																															
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111 – 140	###	7																															
141 – 170	###	5																															
171 – 200		2																															
50.	<p style="text-align: center;"><b>Weights of 20 employees in Healthy Company</b></p> 	<p style="text-align: center;">1</p> <p style="text-align: center;">1</p>	<p>All frequencies (2, 4, 6, 5, 3) must be correct.</p> <p>Correct graph of a frequency polygon</p>																														

## 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 working 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 expressions, units (missing unit or wrong unit), explanation, statement/conclusion and use of symbols, etc.