
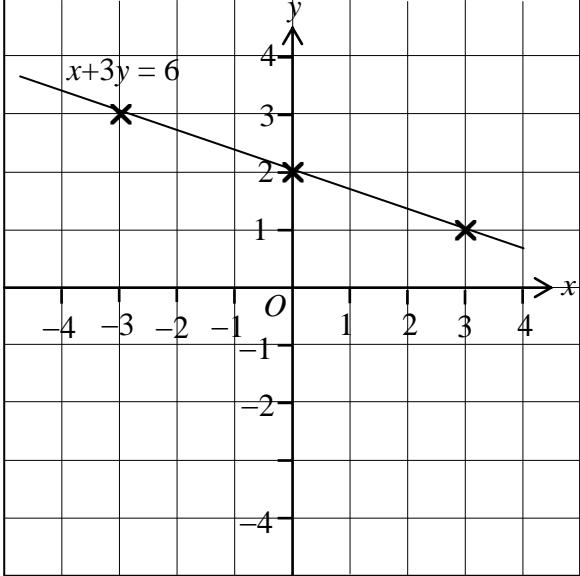


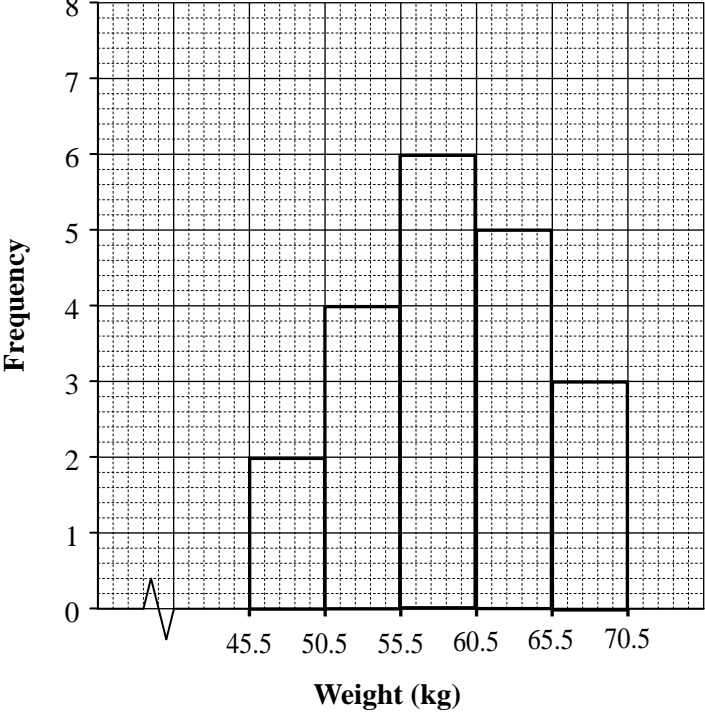
Education and Manpower Bureau
Territory-wide System Assessment 2007
Secondary 3 Mathematics
Marking Scheme

Question No.	Correct answer	Marks	Remarks
1.	C	1	
2.	C	1	
3.	A	1	
4.	B	1	
5.	A	1	
6.	C	1	
7.	D	1	
8.	A	1	
9.	D	1	
10.	B	1	
11.	D	1	
12.	C	1	
13.	B	1	
14.	C	1	
15.	B	1	
16.	C	1	
17.	B	1	
18.	C	1	
19.	-9	1	
20.	6	1	
21.	$\underline{10} : \underline{3}$	1	
22.	80	1	
23.	$2x + 5y = 100$	1	Accept equivalent equations
24.	n^2	1	
25.	$x^4 - 2x^3 + x - 5$	1	Acceptable answer: $+x^4 - 2x^3 + x - 5$
26.	$-6x^2y$	1	Acceptable answer: $-6yx^2$
27.	$(1 + 2x)(1 - 2x)$	1	Acceptable answers: $(1 - 2x)(1 + 2x)$, etc
28.	$(x + 5)(x - 2)$	1	Accept $(x - 2)(x + 5)$, etc.

Question No.	Correct answer	Marks	Remarks
29.	$-\frac{5}{4}$ or -1.25	1	
30.	$x < -1$	1	
31.	144	1	
32.		1	Acceptable 2-D shape: rectangle
33.	2	1	
34.	14	1	
35.	28	1	
36.	$\angle AEF / \angle FEA / \angle BHG / \angle GHB$	1	
37.	12	1	
38.	34.8	1	
39.	(i) Continuous (ii) Discrete	1	Mark given only when both answers are correct.
40.	11.5	1	
41.	81	1	
42.	$\frac{18}{25}$ or 0.72	1	Acceptable answer : 72%
43.	Total amount $\approx \$5 \times 2 + \$20 \times 3 + \$15 \times 2 + \10×1 $= \$110$ OR $\because \$19.7, \14.8 and $\$9.8$ are close to $\$20, \15 and $\$10$ respectively. \therefore Total amount $\approx \$110$	1 1* 1 1*	Accept other reasonable methods of estimation 1 mark for the estimated value Accept other reasonable methods of estimation 1 mark for the estimated value
44.	The amount received after 2 years $= \$50\,000 \times (1 + 4\%)^2$	1	Accept any other correct working

Question No.	Correct answer	Marks	Remarks								
	= \$54 080	1* 1**	1 mark for answer 1 mark for literal expression / unit / presentation								
45(a).	$r = \frac{S-a}{S}$ or $r = 1 - \frac{a}{S}$	1									
45(b).	$r = \frac{6-9}{6}$ $= -\frac{1}{2} \text{ or } -0.5$ <p>OR</p> $6 = \frac{9}{1-r}$ $r = 1 - \frac{9}{6}$ $= -\frac{1}{2} \text{ or } -0.5$	1 1* 1 1*	1 mark for substituting values into the formula obtained in (a) 1 mark for answer 1 mark for substituting values into the formula 1 mark for answer								
46.	<table border="1" data-bbox="276 1249 770 1350"> <tr> <td>x</td> <td>-3</td> <td>0</td> <td>3</td> </tr> <tr> <td>y</td> <td>3</td> <td>2</td> <td>1</td> </tr> </table> 	x	-3	0	3	y	3	2	1	1 1	Both y-coordinates must be correct. Mark given only when the straight line passes through all 3 points.
x	-3	0	3								
y	3	2	1								

Question No.	Correct answer	Marks	Remarks
47.	$\text{Volume} = \frac{4}{3}\pi(6)^3 \text{ cm}^3$ $= 288\pi \text{ cm}^3$	1 1* 1**	1 mark for substituting values into the formula $\text{Volume} = \frac{4}{3}\pi r^3$ 1 mark for answer 1 mark for literal expression / unit / presentation
48.	$\angle ABE + \angle BED = (20^\circ + 105^\circ) + 55^\circ$ $= 180^\circ$ <p>$\therefore AB \parallel DE$ (int. \angles supp.)</p>	1 1	1 mark for correct working Award mark only when the correct reason is given.
49.	(a) $\tan \theta = \frac{4}{3}$ $\theta = 53^\circ$ (b) N53°E	1 1* 1* 1**	1 mark for correct working 1 mark for answer 1 mark for answer 1 mark for unit / presentation in both part (a) and part (b)
50.	No. The median is more appropriate than the mean to represent the average monthly salary of the employees. OR The mean is easily affected by extreme values.	1 1	Mark given only when an explanation is given. 1 mark for reasonable explanation.

Question No.	Correct answer	Marks	Remarks
51.	<p style="text-align: center;">Weights of 20 employees in Healthy Company</p>  <p style="text-align: center;">Frequency</p> <p style="text-align: center;">Weight (kg)</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 correctly represented by the bars.</p> <p>Correct graph of a histogram</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.