



ANNUAL NATIONAL ASSESSMENT
2013
GRADE 6 MATHEMATICS
EXEMPLAR QUESTIONS MEMORANDUM

General marking note:

1. Give full marks for answers only, unless otherwise stated.
2. Accept any alternative correct solution that is not included in the memorandum.

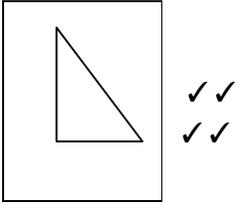
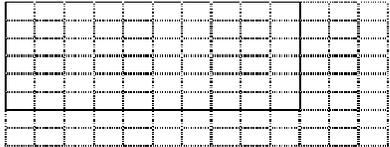
This memorandum consists of 6 pages.

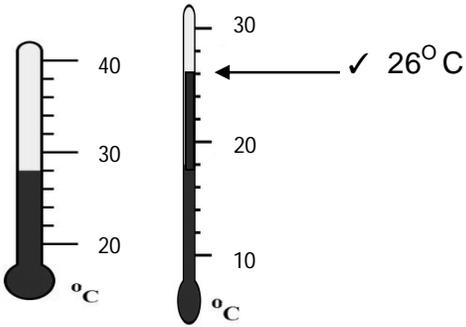
QUESTION	EXPECTED ANSWER	CLARIFICATION	MARKS
1	C ✓		1
2	35 ✓		1
3	D ✓		1
4	D ✓		1
5	3 4 5 10 10 <u>11</u> 12 14 16 19 20 Median = 11 ✓		1
6	D ✓		1
7	D ✓		1
8	7 and 6 ✓		2
9	D ✓		1
10	D ✓		1
11	D ✓		1
12	B ✓		1
13	0,67 ✓		1
14	1,19 ✓		1
15	B ✓		1
16	37 mm ✓ 3,7 cm ✓		2
17	C ✓		1
18	15 ✓		1
19	1; 2; 3; 4; 6; 8; 12; 24 ✓		2
20	C ✓		1
21	B ✓		1
22	D ✓		1
23	Square or rhombus ✓ Rectangle or parallelogram ✓		2
24	Only opposite sides are equal ✓		1
25	B ✓		1
26	D ✓		1
27	Triangular pyramid or tetrahedron ✓		1
28	39 557 ✓		1
29	C ✓		1

30		$2\,010 \times (20+4)$ $= (2\,010 \times 10 \times 2) + (2\,010 \times 4) \checkmark$ $= 40\,200 + 8\,040 \checkmark \checkmark$ $= 48\,240 \checkmark$	Accept any method that is mathematically correct. Mark the steps.	4
31		5 \checkmark		1
32		37 \checkmark		1
33		19 \checkmark		1
34		Million or M or 1 000 000 \checkmark		1
35		70 000 \checkmark		1
36		D \checkmark		1
37		$\begin{array}{r} 367 \\ 154\,881 \\ + 27\,954 \\ \hline 183\,202 \end{array} \checkmark \checkmark$		2
38		98 969 $\checkmark \checkmark$		2
39		3 022 410 $\checkmark \checkmark$		2
40		312 817 $\checkmark \checkmark$		2
41		6 040 475 $\checkmark \checkmark$		2
42		2 553 $\checkmark \checkmark$		2
43		$\begin{array}{r} 4\,278 \\ \times 396 \\ \hline 25\,668 \\ 385\,020 \\ \hline 1\,283\,400 \\ 1\,694\,088 \end{array} \checkmark \checkmark \checkmark$		3
44		191 952 $\checkmark \checkmark \checkmark$		3
45		$\begin{array}{r} 89 \checkmark \checkmark \checkmark \\ 106 \overline{)9434} \\ \underline{- 848} \\ 954 \\ \underline{- 954} \\ 000 \end{array}$		3

46		Answer only: 26 rem 141		3
47		165		3
48		$2\frac{3}{4} + 3\frac{7}{12} - 1\frac{1}{2}$ $= 4 + \left(\frac{9}{12} + \frac{7}{12} - \frac{6}{12}\right)$ $= 4\frac{10}{12}$ $= 4\frac{5}{6}$	Accept any method that is mathematically correct.	4
49		$\frac{25}{36} + \frac{27}{36} = \frac{52}{36}$	Accept any method that is mathematically correct.	4
50		$\frac{15}{9} - \frac{7}{9} = \frac{8}{9}$		4
51		<p>5 % of 160 marks</p> $= \frac{5}{100} \times \frac{160}{1} \text{ marks}$ $= \frac{1}{2} \times \frac{16}{1} \text{ marks}$ <p>= 8 marks</p>		2
52		<p>25% of R200 ✓</p> <p>= 1/4 of R200</p> <p>= R50</p> <p>R200 – R50 = R150</p>		2
53		$8,26 + 3,04 - 6,39$ $= 11,3 - 6,39 \checkmark$ $= 4,91 \checkmark \checkmark$	<p>All digits must be correct.</p> <p>Answer only - all digits correct, full marks.</p> <p>Accept any method that is mathematically correct.</p>	3
54		$5 - 3,64 = 1,36 \checkmark \checkmark$		1
55		$4 \checkmark$		1
56		$2 + 5 \times (9 - 4) = 27$		1
57		$2 \checkmark$		1
58		$29 \checkmark$		1

59	$\text{Profit} = (R5,50 - R3,45) \times 2 \checkmark$ $= R2,05 \times 2$ $= R4,10 \checkmark \text{ or}$ $\text{Profit for 1 melon} = R5,50 - R3,45$ $= R2,05 \checkmark$ $\text{Profit for 2 melons} = R4,10 \checkmark$	<p>Accept any method that is mathematically correct.</p> <p>Mark the steps.</p>	2																								
60	183 ✓		1																								
61	53 ✓		1																								
62	139		1																								
63	C ✓		1																								
64	$\text{Number of boxes} = 4\,310 \div 48$ $= 89 \text{ r } 38 \checkmark$ $\therefore \text{Number of boxes needed} = 90 \checkmark$	$89 \checkmark \text{ r } 38 \checkmark$ $\begin{array}{r} 48 \overline{) 4\,310} \\ \underline{- 3\,84} \\ 470 \\ \underline{- 432} \\ 38 \end{array}$	<p>Accept any method. If answer is correct award full marks.</p>	3																							
65	$\text{Number of ml} = 250\text{ml} \times 50 \div 2$ $= 12\,500 \text{ ml} \div 2$ $= 6\,250 \text{ ml}$ $\text{Number of litres} = 6,25$ $\text{Number of 2-litre bottles} = 7$	<p>Accept any method. If answer is correct award full marks.</p>	3																								
66	$\text{Decimal fraction} = 0,12 \checkmark$ $\text{Percentage} = 60 \% \checkmark$ $\text{Common fraction} = \frac{13}{20} \checkmark$		3																								
67	$25\% = 0,25 \checkmark$ $75\% = \frac{3}{4} \checkmark$		2																								
68	0,024 0,38 3,8 ✓✓✓		3																								
69	4,4 ✓		1																								
70	31 ✓ ($y = 4x - 1$)		1																								
71	<table border="1" style="border-collapse: collapse; width: 100%; text-align: center;"> <tbody> <tr> <td style="padding: 5px;">Figure</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">10</td> <td style="padding: 5px;">25</td> <td style="padding: 5px;">100</td> </tr> <tr> <td style="padding: 5px;">Number of squares</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">7</td> <td style="padding: 5px;">19</td> <td style="padding: 5px;">49</td> <td style="padding: 5px;">199</td> </tr> <tr> <td style="padding: 5px;">Number of matches</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">12</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">28</td> <td style="padding: 5px;">76</td> <td style="padding: 5px;">196</td> <td style="padding: 5px;">796</td> </tr> </tbody> </table>	Figure	1	2	3	4	10	25	100	Number of squares	1	3	5	7	19	49	199	Number of matches	4	12	20	28	76	196	796		3
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Number of squares	1	3	5	7	19	49	199																				
Number of matches	4	12	20	28	76	196	796																				
72	$\text{Replace A with } x \times 4 \checkmark$ $\text{Replace B with } 9 \checkmark$		2																								
73	$H = 89$ $K = 11$		2																								

74				2
75		Obtuse ✓ Acute ✓		2
76		90° or right angle		1
77		18 ✓		2
78		10 ✓		2
79		4 x 4 = 16		2
80		Rectangular prism ✓ No of vertices: 8 ✓ No of edges : 8 ✓		3
81		Cylinder, rectangular prism, hexagon, pentagon		4
82		1		1
83		4		1
84		Rotation		1
85		 Length = 10 ✓ Breadth = 6 ✓		2
86	86.1	3.30 pm / 15:30 pm ✓		1
	86.2	 ✓ CAPE TOWN	Both clocks must be correct.	1
87		19:30 to 24:10 is 4 h30 min 24:00 to 15:45 is 15 h 45 min 20 hours 15 minutes		3
88	88.1	5 hours 40 minutes		2
	88.2	B or 20		1
89		5 250 mℓ		2
90	90.1	260 g		2
	90.2	0,26 kg		
91		R30,95 x 2 or R59,90 ÷ 2 = R61,90 ✓ = R29,95 ✓ ∴ 200 kg coffee for R59,90 is a better buy. ✓		2

92		$330 \div 11 = 30 \checkmark$ The cost of six copies = $30 \times 6 = R180$		3									
93				1									
94		Thambo's length = $(3,6 \text{ m} - 0,8 \text{ m}) \div 2$ $= 2,8 \text{ m} \div 2$ $= 1,4 \text{ m} \checkmark$ Vusi's length = $1,4 \text{ m} + 0,8 \text{ m}$ $= 2,2 \text{ m} \checkmark$		3									
95		Number of litres = $90 \div 10 \times 2 = 18$ liters		3									
96	96.1	USA		1									
	96.2	Difference = $75 \text{ years} - 64 \text{ years}$ $= 11 \text{ years}$		1									
	96.3	India		2									
	96.4	$25:75 = 1:3$		2									
97		<table border="1" data-bbox="474 1041 1149 1268"> <thead> <tr> <th>FAVOURITE COLOUR</th> <th>TALLY MARKS</th> <th>FREQUENCY</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>### ### //</td> <td>12</td> </tr> <tr> <td>Pink</td> <td>### //</td> <td>7</td> </tr> </tbody> </table>	FAVOURITE COLOUR	TALLY MARKS	FREQUENCY	Red	### ### //	12	Pink	### //	7		
FAVOURITE COLOUR	TALLY MARKS	FREQUENCY											
Red	### ### //	12											
Pink	### //	7											
98	98.1	$60 + 30 = 90$		2									
	98.2	$80 - 20 = 60$											
99		43		1									
100		79		1									