



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

**GAUTENG DEPARTMENT OF EDUCATION
PROVINCIAL EXAMINATION**

2015

GRADE 6

MATHEMATICS

X-PAPER

MEMORANDUM

7 pages

GAUTENG DEPARTMENT OF EDUCATION
PROVINCIAL EXAMINATIONMATHEMATICS
(X-Paper)**Important information:**

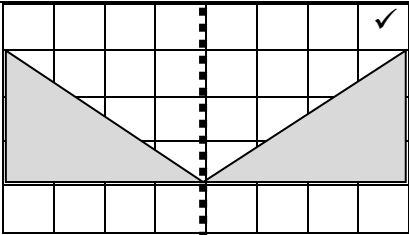
1. Give full marks for answers only, unless otherwise stated.
2. Accept any alternative correct solution that is not included in the memorandum.
3. CA refers to consistent accuracy. See clarification in question.

Question	Expected Answer	Clarification	Mark	Total
1	1.1	C ✓	1	10
	1.2	A ✓	1	
	1.3	D ✓	1	
	1.4	A ✓	1	
	1.5	B ✓	1	
	1.6	D ✓	1	
	1.7	D ✓	1	
	1.8	C ✓	1	
1.9	C ✓	1		
	1.10	B ✓	1	
2	2.1	$\begin{array}{r} 7\ 211\ 568 \\ +\ 5\ 722\ 188 \\ \hline 12\ 933\ 756 \\ \quad \checkmark \quad \checkmark \end{array}$	756 : 1 mark 12 933 : 1 mark	2
	2.2	$\begin{array}{r} 4\ 071\ 274 \\ -\ 2\ 128\ 863 \\ \hline 1\ 942\ 411 \\ \quad \checkmark \quad \checkmark \end{array}$	411 : 1 mark 1 942 : 1 mark	2

2.3	$\begin{array}{r} 4\,748 \\ \times \quad 36 \\ \hline 28\,488 \checkmark \\ + 142\,440 \checkmark \\ \hline 170\,928 \checkmark \end{array}$ <p>Example of CA:</p> $\begin{array}{r} 4\,748 \\ \times \quad 36 \\ \hline 28\,488 \checkmark \\ + 14\,244 \times \\ \hline 42\,732 \checkmark \end{array}$ <p>Multiplied 4 748 by 6 correctly Error with multiplying 4 748 by 30 Added the steps correctly</p>	<p>28 488 : 1 mark 142 440 : 1 mark 170 928 : 1 mark</p> <p>Apply CA</p> <p>The learner loses the mark for the multiplication error, but can still get the marks for the first step and for adding correctly.</p>	3	
2.4	$\begin{array}{r} 307 \checkmark \\ 25 \overline{) 7675} \\ \underline{- 75} \quad \checkmark \\ 175 \\ \underline{- 175} \quad \checkmark \\ 0 \end{array}$	<p>Answer only: 3 marks</p> <p>307 : 1 mark 75 in the calculation : 1 mark 175 in the calculation: 1 mark</p> <p>Apply CA</p>	3	
2.5	$\begin{aligned} 2\frac{6}{7} + 3\frac{1}{14} \\ = 5 \checkmark + \frac{6}{7} + \frac{1}{14} \\ = 5 + \frac{12}{14} + \frac{1}{14} \checkmark \\ = 5 \frac{13}{14} \checkmark \end{aligned}$	$\begin{aligned} 2\frac{6}{7} + 3\frac{1}{14} \\ = \frac{20}{7} + \frac{43}{14} \checkmark \\ = \frac{40+43}{14} \checkmark \\ = \frac{83}{14} \checkmark \\ \text{OR } 5 \frac{13}{14} \end{aligned}$ <p>Answer only : 3 marks</p> <p>5: 1 mark</p> <p>$\frac{12}{14} + \frac{1}{14}$: 1 mark</p> <p>$5 \frac{13}{14}$: 1 mark</p> <p>Accept any equivalent form of the answer.</p> <p>Apply CA</p>	3	

2.6	$5\frac{7}{8} - 1\frac{4}{8}$ $= 5 - 1 + \left(\frac{7}{8} - \frac{4}{8}\right)$ $= 4 \checkmark \frac{3}{8} \checkmark$	OR $5\frac{7}{8} - 1\frac{4}{8}$ $= \frac{47}{8} - \frac{12}{8} \checkmark$ $= \frac{35}{8} \checkmark$ OR $4\frac{3}{8}$	Answer only : 2 marks 4 : 1 mark $\frac{3}{8}$: 1 mark	2	
2.7	$\begin{array}{r} 45,05 \\ - 19,21 \\ \hline 25,84 \\ \checkmark \quad \checkmark \end{array}$		Answer only: 2 marks 25 : 1 mark 0,84 : 1 mark No marks can be awarded if the learner did not include the decimal comma in the answer.	2	
2.8	$40\% \text{ of } 150$ $= \frac{40}{100} \times \frac{150}{1} \left. \vphantom{\frac{40}{100} \times \frac{150}{1}} \right\} \checkmark$ $= \frac{6000}{100}$ $= 60 \checkmark$		Answer only : 2 marks Any step of the calculation: 1 mark 60 : 1 mark Apply CA	2	
2.9	$10 \times (3 + 15) - 6$ $= 10 \times 18 \checkmark - 6$ $= 180 - 6$ $= 174 \checkmark$		Answer only : 2 marks Calculating the brackets first : 1 mark 174 : 1 mark Apply CA	2	
2.10	$18,03 \times 100 = 1\,803 \checkmark$			1	22

3		<p>1 hour = 30 km</p> <p>$\frac{1}{2}$ hour = 15 km ✓</p> <p>4 x 30 km = 120 km ✓</p> <p>120 km + 15 km = 135 km ✓</p>	<p>Answer only : 3 marks</p> <p>120 km : 1 mark 15 km : 1 mark 135 km : 1 mark</p> <p>Apply CA</p>			3									
4		<table border="1"> <thead> <tr> <th>FRACTION</th> <th>DECIMAL</th> <th>PERCENTAGE</th> </tr> </thead> <tbody> <tr> <td>$\frac{4}{10}$</td> <td>0,4</td> <td>40% ✓</td> </tr> <tr> <td>$\frac{75}{100}$</td> <td>0,75 ✓</td> <td>75%</td> </tr> </tbody> </table>	FRACTION	DECIMAL	PERCENTAGE	$\frac{4}{10}$	0,4	40% ✓	$\frac{75}{100}$	0,75 ✓	75%	<p>Do not penalize the learner if the % is not written.</p> <p>40% : 1 mark</p> <p>0,75 : 1 mark</p>			2
FRACTION	DECIMAL	PERCENTAGE													
$\frac{4}{10}$	0,4	40% ✓													
$\frac{75}{100}$	0,75 ✓	75%													
5	5.1	8 ✓		1											
	5.2	3 ✓		1		2									
6		36 ✓				1									
7		3 ✓				1									
8	8.1	16 ✓ (4 × 4)		1											
	8.2	Model number × model number ✓	<p>Accept any equivalent form of this statement: n^2 <i>Model number</i>²</p> <p>Model number times itself</p>	1											
	8.3	6 rows ✓ (6 × 6 = 36)		1		3									
9	9.1	B ✓	If learners matched the columns by drawing lines, the marks may be awarded	1											
	9.2	D ✓		1											
	9.3	A ✓		1		3									
10	10.1	an acute angle ✓		1											
	10.2	a reflex angle ✓		1											
	10.3	a revolution ✓		1		3									

11	11.1	Triangular-based pyramid or Tetrahedron ✓		1	
	11.2	4✓		1	2
12		B✓			1
13		One✓			1
14	14.1	C3 ✓ OR 3C		1	
	14.2	Triangle✓		1	2
15	a	60 hours✓	Do not penalize for not writing the unit	1	
	b	41 500g✓		1	2
16		8 x 15✓ =R120 R120 + R9✓ =R129✓	Do not penalize for not writing the "R" Answer only : 3 marks 8 x 15 : 1 mark R9 : 1 mark R129 : 1 mark Apply CA		3
17	17.1	8 square units✓ or 8cm^2	Do not penalize the learner if "square unit" is not written.	1	
	17.2		The reflected triangle must be 4 blocks long and 3 blocks high.	1	2
18		6 x 8✓ 48 cm✓	Accept any method Answer only : 2 marks 6 x 8 : 1 mark 48 cm : 1 mark		2
19	19.1	Grade 3✓		1	
	19.2	90 – 50 ✓ = 40 minutes✓	Answer only: 2 marks 90 – 50 : 1 mark 40 minutes: 1 mark Do not penalize for not writing the unit	2	
	19.3	Grade 4		1	4

20	<table border="1"> <thead> <tr> <th>Cooldrinks</th> <th>Tally</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Coke</td> <td>### ### ### ### ### ### ### ### ### ###</td> <td>50✓</td> </tr> <tr> <td>Sprite</td> <td>### ### ### ### ### ### // ✓</td> <td>32</td> </tr> </tbody> </table>	Cooldrinks	Tally	Total	Coke	### ### ### ### ### ### ### ### ### ###	50✓	Sprite	### ### ### ### ### ### // ✓	32			2																																								
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Sprite	### ### ### ### ### ### // ✓	32																																																			
21	2✓ (Heads or Tails)			1																																																	
22	3 ✓			1																																																	
23	<p>7 teams \times 6 opponents = 42✓</p> <p>$42 \div 2 = 21$✓</p> <p>(Division by 2 is because team 1 vs team 2 and team 2 vs team 1, are the same match, and is therefore double-counted.)</p> <p>Or</p> <table border="1"> <tbody> <tr> <td>1v2</td> <td>2v3</td> <td>3v4</td> <td>4v5</td> <td>5v6</td> <td>6v7</td> <td></td> </tr> <tr> <td>1v3</td> <td>2v4</td> <td>3v5</td> <td>4v6</td> <td>5v7</td> <td></td> <td></td> </tr> <tr> <td>1v4</td> <td>2v5</td> <td>3v6</td> <td>4v7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1v5</td> <td>2v6</td> <td>3v7</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1v6</td> <td>2v7</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1v7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	1v2	2v3	3v4	4v5	5v6	6v7		1v3	2v4	3v5	4v6	5v7			1v4	2v5	3v6	4v7				1v5	2v6	3v7					1v6	2v7						1v7														<p>Accept any method</p> <p>Answer only : 2 marks</p> <p>42, or attempt at making a table or listing matches : 1 mark</p> <p>21 : 1 mark</p>		2
1v2	2v3	3v4	4v5	5v6	6v7																																																
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TOTAL: 75