

COMPETENCE BASED CURRICULUM JUNIOR SCHOOL GRADE 8 FORMATIVE ASSESSMENT MATHEMATICS

MARKING SCHEME

No.	Working	Marks	
1.	$1044 + 1006 \times 180$ $1006 \times 180 = 181080$ $1044 + 181080 = 182,124$	M_1 M_1, Ans_1	Long method only
2.	Let the number be x LCM = product of the number GCD of the number $140 = 20 \times x$ 20 $X = 140 \times 7$ 20 $X = 49$	M_1 M_1 A_1	Mark alternative method.
3.	$X^2 + x = x(x+1)$ $X^2 - 1 = (x+1)(x-1)$ $X^2 - x = x(x-1)$ $X(x+1)(x-1)$ $X^3 - x$	M_1 M_1 A_1	
4.	$-4 + 108 - 24$ $56 \div 7 \times 2$ $-4 + 108 - 24$	M_1 M_1	Numerator Denominator

	$\frac{16}{80/16} = 5$	A ₁	Accuracy																								
5.	$\frac{3}{8} \left(\frac{38}{5} - \frac{55}{36} \times \frac{12}{5} \right)$ $\frac{3}{8} \times \frac{59}{40} = \frac{119}{40}$	M ₁ M ₁ , A ₁																									
6.	$8 + (-4) + -22$ $\frac{-24}{33}$ $\frac{4}{-24} - \frac{22}{33} = \frac{-1}{6} - \frac{2}{3}$ $\frac{-3}{18} - \frac{12}{18} = \frac{-15}{18} = \frac{-5}{6}$	M ₁ M ₁ M ₁ A ₁																									
7.	L.C.M of 30, 36, and 45 <table border="1" data-bbox="168 779 721 1033"> <tbody> <tr> <td></td> <td>30</td> <td>36</td> <td>45</td> </tr> <tr> <td>2</td> <td>15</td> <td>18</td> <td>45</td> </tr> <tr> <td>2</td> <td>15</td> <td>9</td> <td>45</td> </tr> <tr> <td>3</td> <td>5</td> <td>3</td> <td>15</td> </tr> <tr> <td>3</td> <td>5</td> <td>1</td> <td>5</td> </tr> <tr> <td>5</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table> $\text{L.C.M} = 2^2 \times 3^2 \times 5 = 180$ $M = 180 + 7 = 187$		30	36	45	2	15	18	45	2	15	9	45	3	5	3	15	3	5	1	5	5	1	1	1	M ₁ M ₁ A ₁	
	30	36	45																								
2	15	18	45																								
2	15	9	45																								
3	5	3	15																								
3	5	1	5																								
5	1	1	1																								
8.	36, 192, 120, 744, and 9564	3mks 1 mk 0 mk	All listed When 2 numbers wrong More than 2 numbers wrong																								
9.	$8 + 6 + 4 + 9 = 27$ $2 + 0 + x$ $27 - (2 + x) = 11$ $27 - 2 - x = 11$ $X = 27 - 2 - 11$ $X = 27 - 13 = 14$ <p>14 can not be the answer,</p> $27 - (2 + x) = 22$ $27 - 2 - x = 22$ $X = 27 - 2 - 22$ $X = 27 - 24$ $X = 3$	M ₁ M ₁ A ₁	But only one digit needed																								

10.	$\frac{4 \times (-2) \times (-6)}{4}$ $= 12$	M ₁ A ₁	
11.	-2 $-9-8-7-6-5-4-3-2-10$ $+6$ $(-7) + (-2) + (+6) = -3$		
12.	$R = 3.256$ $10R = 32.5656\dots$ $1000R = 3256.565656\dots$ $990R = 3256.5656\dots$ $- \quad 32.5656\dots$ $3224.0000\dots$ $R = 3224/990$	M ₁ M ₁ A ₁	
13.	$9/5 \times 33/4 = 297/20$ $297/20 - 5$ $= 14^{17}/20 - 5$ $= 9^{17}/20$	M ₁ M ₁ A ₁	
14.	$10/21 + (-1/18) \div 7/18$ $10/21 + (-1/18 \times 18/7)$ $= 10/21 - 1/7$ $10/21 - 3/21$ $= 7/21 = 1/3$	M ₁ M ₁ A ₁	
15.	2km $1/3 \times 2$ $= 2/3$ $\text{Distance from k} = 2 - 2/3$ $= 1^{1/3}$	M ₁ M ₁ A ₁	

d)	i) $\ast = 2$ ii) $\ast = 3$ NB: There could be other numbers iii) $\ast = 0$	M 1 A 1																												
20.	L.C.M of 324 and 220 a) <table border="1" data-bbox="167 413 721 793" style="margin-left: 20px;"> <tr><td></td><td>324</td><td>220</td></tr> <tr><td>2</td><td>162</td><td>110</td></tr> <tr><td>2</td><td>81</td><td>55</td></tr> <tr><td>3</td><td>27</td><td>55</td></tr> <tr><td>3</td><td>9</td><td>55</td></tr> <tr><td>3</td><td>3</td><td>55</td></tr> <tr><td>3</td><td>1</td><td>55</td></tr> <tr><td>5</td><td>1</td><td>11</td></tr> <tr><td>11</td><td>1</td><td>1</td></tr> </table> $LCM = 2^2 \times 3^4 \times 5 \times 11$ $= 17,820$		324	220	2	162	110	2	81	55	3	27	55	3	9	55	3	3	55	3	1	55	5	1	11	11	1	1	 M 1 A 1	
	324	220																												
2	162	110																												
2	81	55																												
3	27	55																												
3	9	55																												
3	3	55																												
3	1	55																												
5	1	11																												
11	1	1																												
	b) i) son $17820/324$ $= 55$ items ii) daughter $17820/220$ $= 81$ items	 A ₂ A ₂																												

21.	<p>2010 = 750 = 100%</p> <p>2011 (100-30)% of 750 bags-B 1</p> $70/100 \times 750$ $= 525 \text{ Bags- B 1}$ <p>2012 $115/100 \times 525$</p> $603.75 \text{ Bags- Bags}$ <p>2010 $750 \times 55 = 41250 \text{ kg}$</p> <p>1 ton = 1000kg</p> 41250 kg $41250/1000$ $= 41.25 \text{ tonnes - M 1}$ <p>1 tonne = 7900</p> $41.25 \text{ tonne} = ?$ $7900 \times 41.25 = \text{sh. } 325875 - \text{B 1}$ <p>2011 $525 \times 55 \times \frac{110}{100} \times 7900$</p> 1000 $= \text{sh. } 250923.75 - \text{M 1}$ <p>2012 $603.75/1000 \times 55 \text{ B 1}$</p> $110/100 \times 8690 = \text{sh. } 317418$ <p>Total 325875.00 M 1</p> 250923.75 317418.54 894217.29 A 1		
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<p>22.</p>	<p>a) $x = GCD \times LCM$ # given $= 26 \times 1092$ 182 $= 156$ Or: $GCD = 26 = 2 \times 13$</p> <p>$LCM = 1096 = 2^2 \times 3 \times 7 \times 13$ $182 = 2 \times 7 \times 13$</p> <p>Comparing factors of GCD and LCM and 182 $X = 2^2 \times 3 \times 13 = 156$</p> <p>NB: For LCM; Common factors with lowest power GCD common factors with lowest power</p>	<p>M 1</p> <p>A 2</p>	
	<p>b) Muigai = sh p</p> <p>Nzau = sh 4p</p> <p>Muli = sh. 2p</p> <p>i) Total = $p + 4p + 2p = 7p$ ii) P = sh 1500</p> <p>Muigai 1500</p> <p>Nzau 6000</p> <p>Muli 3000</p> <p>total Sh. 10500</p>	<p>M 1</p> <p>M 1</p> <p>M1</p> <p>A 1</p>	
	<p>c) $w = 35^\circ$ - vertically opposite angles are equal</p> <p>$x = 35^\circ$ - corresponding angles</p> <p>$y = (180 - 35)^\circ$ $= 145^\circ$ Supplementally angles</p> <p>$Z = 145^\circ$ Corresponding angles sum is equal to 180°</p>	<p>A 1</p> <p>A 1</p> <p>A 1</p> <p>A 1</p>	

23.	a) $2340 + 3455 + 675 + 960 + 1350$ $= 8780$	A 2	
	b) i) lost job $\frac{2340}{5} + \frac{3455}{5}$ $468 + 691$ $= 1159$	M 1 M 1 A 1	
	iii) Got jobs $\frac{675}{3} + \frac{960}{3} + \frac{1350}{3}$ $225 + 320 + 450$ $= 995 \times 2$ $= 1990$	M 1 M 1 A 1	
	c) $8780 + 1990 - 1159$ $= 9,611$	M 1 A 1	

24.

a)

Mass	Frequency	fx
90	2	180
91	1	91
94	3	282
96	2	192
98	2	196
99	4	396
102	3	306
105	3	315

1958

20

A 1

i) Mode=94 Number repeated many times

A 1

ii) Mean 1958/20
iii) =97.9

A 1

b) Thursday bought = 1948

M 1

Sold = 750

Balance = 1,198

M 1

Friday; sold 240 + 750 = 990

M 1

Balance = 1,198-990

= 208

Saturday; Bought 560

M 1

Total on sat 560 + 208 =768

	Money = $768 \times 8 = \text{Ksh. } 6144$	A 1	
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