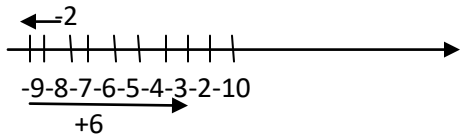
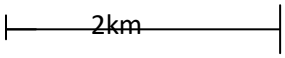
MARKING SCHEME

FORM 1 MATHEMATICS

<table>
<tr><th>No.</th><th>Working</th><th>Marks</th><th></th></tr>
<tr><td>1.</td><td>1044 + 1006×180
1006×180=181080
1044+181080= 182,124</td><td>
M_1
M_1, Ans $_1$</td><td>Long method only</td></tr>
<tr><td>2.</td><td>Let the number be x
LCM=$\frac{\text{product of the number}}{\text{GCD of the number}}$
$140 = \frac{20\times x}{20}$
$X = \frac{140\times 7}{20}$
X = 49</td><td>

M_1
M_1
A_1</td><td>Mark alternative method.</td></tr>
<tr><td>3.</td><td>$X^2 + x = x(x+1)$
$X_2-1= (x+1)(x-1)$
$X^2-x =x(x-1)$
$X(x+1)(x-1)$
X^3-x</td><td>M_1
M_1
A_1</td><td></td></tr>
<tr><td>4.</td><td>$\frac{-4+108-24}{56\div 7\times 2}$
$\frac{-4+108-24}{16}$
$^{80}/_{16} = 5$</td><td>M_1
M_1
A_1</td><td>Numerator
Denominator
Accuracy</td></tr>
<tr><td>5.</td><td>$^3/_8 (^{38}/_5 - ^{55}/_{36} \times ^{12}/_5)$
$^3/_8 \times ^{59}/_{40} = 1^{19}/_{40}$</td><td>$M_1$
M_1, A_1</td><td></td></tr>
<tr><td>6.</td><td>$\frac{8+(-4)}{-24} + \frac{-22}{33}$
$^4/_{-24} - ^{22}/_{33} = ^{-1}/_6 - ^2/_3$
$\frac{-3-12}{18} = ^{-15}/_{18} = ^{-5}/_8$</td><td>$M_1$
M_1
M_1
A_1</td><td></td></tr>
<tr><td>7.</td><td>L.C.M of 30, 36, and 45
<table>
<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>
</table></td><td>M_1</td><td></td></tr>
</table>

	5 | 1 | 1 | 1 L.C.M = $2^2 \times 3^2 \times 5 = 180$ M=180+7=187	M_1 A_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 14 can not be the answer, 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.	 (-7) + (-2) +(+6) = =-3		
12.	R=3.$\dot{2}\dot{5}\dot{6}$ 10r=32.5656…. 1000r=3256.565656….. 990r=3256.5656…. - 32.5656…. 3224.0000…. 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.	 1/3×2 = 2/3 Distance from k= $2-{}^{2}/_{3}$ $= 1^{1}/_{3}$	M_1 M_1 A_1	
16.	L.C.M of 60 and 42 (table below) L.C.M = $2^2 \times 3 \times 5 \times 7$ =420 Area = 4.2×4.2 $=17.64M^2$	M_1 M_1 A_1	
17.	a) Let his salary be sh. X School fees $^{1}/_{4}x$ Remaining $^{3}/_{4}x$ Electricity and water bills $^{1}/_{4}x \times {}^{3}/_{4}x$ $= {}^{3}/_{16}x$ Remaining $^{3}/_{4}x - {}^{3}/_{16}x$ $= {}^{9}/_{16}x$ Transport $^{1}/_{9} \times {}^{9}/_{16}x$ = 1/16x Remaining $= {}^{9}/_{16}x - {}^{1}/_{16}x$ $= {}^{8}/_{16}x = {}^{1}/_{2}x$ $^{1}/_{2}x$=3,400	M 1 M 1 M 1 M 1	

	60	42
2	30	21
2	15	21
3	5	7
5	1	7
7	1	1

	X = 3,400×2 =6,800	A 1	
	b) School fees = $^{1}/_{4}$×6,800 =sh. 1,700	A 1	
	c) Transport = $^{1}/_{16}$x x $^{1}/_{16}$×6,800 Sh. 425	A 2	
	d) Electricity and water bills $^{3}/_{16}$x = $^{3}/_{16}$×6,800 Sh. 1,275	A 2	
18	Let B be the beginning and E stand for end of the B 23p 20p 26 E 1st stop 2nd stop 1st 23-23 = 11 9+11= 20 2nd stop 9-6= 3 20-6= 14 Final destination 14 + 12= 26 Passangers	M 1 M 1 A 1	
	b) 23+9+12 =44 Passangers	M 1 A 1	
	c)12×50 = sh. 600 11×85= sh.935 6×20 = sh.120 3×35 = sh.105 12×15 = sh. 180 Sh. 1,940	M 1 M 2 A 1	
19.	a) i) 2+6-*=0 *=8 ii)8+7-*+1 = 11 14-* = 11 *=14-11= 3 iii) 8+9+9-*+1 = 22 26-*-1 = 22 *= 25-22 = 3	M 1 M 1 A 1	
	b) i) 3+9+6+*+5 23+* sum divisible by 9 23+* = 27 * = 27-23 = 4 ii)4+8+6+7+5+* 30+* = 36 *36-30 = 6	M 1 A 1	

<table>
<tr><td></td><td>iii)3+4+9+*+*
16+*+* = 18
+ = 18-16 =2
* *
2 0
0 2 MaRK FOR OTHERS THAT ARE CORRECT</td><td></td><td></td></tr>
<tr><td>C)</td><td>i) 3+*+7 = 12
*= 2
ii) * 1
iii) * 0 Mark for other values that are correct</td><td>M 1
A 1</td><td></td></tr>
<tr><td>d)</td><td>i) *= 2
ii) * =3 NB: There could be other numbers
iii * = 0</td><td>M 1

A 1</td><td></td></tr>
<tr><td>20.</td><td>L.C.M of 324 and 220
a)
<table><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</td><td>M 1

A 1</td><td></td></tr>
<tr><td></td><td>b) i) son 17820/324
= 55 items

ii) daughter 17820/220
= 81 items</td><td>A_2

A_2</td><td></td></tr>
</table>

21.	2010 = 750 =100% 2011 (100-30)% of 750 bags-B 1 70/100×750 =525 Bags- B 1 2012 115/100×525 603.75 Bags- Bags 2010 750 × 55= 41250kg 1 ton= 1000kg 41250kg 41250/1000 = 41.25 tonnes – M 1 1 tonne = 7900 41.25 tonne = ? 7900×41.25 = sh. 325875 – B 1 2011 $\frac{525\times55}{1000}$ × $^{110}/_{100}$×7900 = sh. 250923.75 – M 1 2012 603.75/1000×55 B 1 110/100×8690 = sh. 317418 Total 325875.00 M 1 250923.75 317418.54 894217.29 A 1		

22.	a) $x = \frac{GCD \times LCM}{\#\ given}$ $= \frac{26\times1092}{182}$ = 156 Or: GCD = 26 =2×13 LCM =1096 = 2^2×3×7×13 182= 2×7×13 Comparing factors of GCD and LCM and 182 X= 2^2×3×13 = 156 NB: For LCM; Common factors with lowest power GCD common factors with lowest power	M 1 A 2	
	b) Muigai = sh p Nzau = sh 4p Muli = sh. 2p i) Total = p+4p+2p = 7p ii) P= sh 1500 Muigai 1500 Nzau 6000 Muli 3000 total Sh. 10500	M 1 M 1 M1 A 1	
	c) w = 35° - vertically opposite angles are equal x= 35° - corresponding angles y= (180-35)° = 145° Supplementally angles Z = 145° Corresponding angles sum is equal to 180°	A 1 A 1 A 1 A 1	
23.	a) 2340 + 3455 + 675 + 960 + 1350 = 8780	A 2	

	b) i) lost job $^{2340}/_{5}$ + $^{3455}/_{5}$ 468 + 691 = 1159	M 1 M 1 A 1	
	iii) Got jobs $^{675}/_{3}$ + $^{960}/_{3}$ + $^{1350}/_{3}$ 225 + 320 450 = 995 ×2 =1990	M 1 M 1 A 1	
	c) 8780 + 1990 – 1159 = 9,611	M 1 A 1	

24.	a) <table><tr><td>Mass</td><td>Frequency</td><td>fx</td></tr><tr><td>90</td><td>2</td><td>180</td></tr><tr><td>91</td><td>1</td><td>91</td></tr><tr><td>94</td><td>3</td><td>282</td></tr><tr><td>96</td><td>2</td><td>192</td></tr><tr><td>98</td><td>2</td><td>196</td></tr><tr><td>99</td><td>4</td><td>396</td></tr><tr><td>102</td><td>3</td><td>306</td></tr><tr><td>105</td><td>3</td><td>315</td></tr></table> 20 1958 i) Mode=94 Number repeated many times ii) Mean 1958/20 iii) =97.9	A 1 A 1 A 1	
	b) Thusday bought = 1948 Sold = 750 Balance = 1,198 Friday; sold 240 + 750 = 990 Balance = 1,198-990 = 208 Saturday; Bought 560 Total on sat 560 + 208 =768 Money = 768 ×8 = Ksh. 6144	M 1 M 1 M 1 M 1 A 1	
