

## LINEAR EQUATION MARKING SCHEME

NO	SOLUTION	MARKS	
1.	$3a + 2c = 220$ $2(4a + 1c = 185)$  $8a + 2c = 370$ _ $\underline{3a + 2c = 220}$ $5a = 150$  $a = 30$  $3(30) + 2c = 220$ $2c = 220 - 90$ $2c = 130$ $C = 65$  $= \text{Sh.}65$	3M	<b>1989Q3</b>
2.	$50p + 30j = 4260$ $45p + 15j = 2970$  $90p + 30j = 5940$ $50p + 30j = 4260$ $\quad 40p = 1680$ $\quad P = 42$  $50(42) + 30j = 4260$ $30j = 4260 - 2100$ $\quad = 2160$ $j = \frac{2160}{3} = 72$  From B Cost of p = $\frac{110}{100} \times 42 = 46.20$  Cost of j = $\frac{85}{100} \times 72 = 61.20$  Total cost $46.20(50) + 61.20(30)$ $\quad = 4156$ Save = $4260 - 4156 = 104/=$	8M	<b>1989Q19</b>
3.	$9(12a + 4b = 2600)$ $4(15a + 9a = 7800)$  $108a + 36b = 50400$ _ $60a + 36b = 31200$ _  $\underline{48a = 19200}$ $48 \quad 48$  $a = 400$ $= \text{sh } 400$	3M	<b>1990Q5</b>
4.	$2(2t + 3s = 390)$ $3(5t + 2s = 810)$  $15t \quad 3s = 2430$ _ $4t + 6s = 780$  $\underline{11t = 1650}$ $11 \quad 11$ $t = 150$ $2(150) + 3s = 390$ $\quad 3s = 90$ $\quad 3 \quad 3 \quad s = 30$ Trousers sh150 Shirt sh. 30		<b>1991Q5</b>
5.	$\frac{1}{4}x = \frac{5}{6}x - 7$  $\frac{5}{6}x - \frac{1}{4}x = 7$  $\frac{20-6}{24x} = 7$ $\frac{14}{24x} = 7$  $24x = \frac{14}{7}$  $\frac{24x}{24x} = \frac{2}{24}$ $= \frac{1}{12}$	3M	<b>1992Q12</b>
6.	$x + 3 + 2 = x + 5$ $3x + 3 + 2 = 3x + 3$ $x + 5 + 3x + 5 = 62$ $4x + 10 = 62$ $4x = 52$ $x = 13$  $13 + 3 = 16$ $3(13) + 3 = 42$ Ali - 16yrs Juma - 42yrs	3M	<b>1993Q11</b>
7.	$3(12x + 5y = 1260)$ $9x + 15y = 1620$  $\left. \begin{array}{l} 36x + 15y = 3780 \\ \underline{7x + 15y = 1620} \end{array} \right\} -$ $27x = 2160$ $x = 80$  $9(80) + 15y = 1620$ $15y = 1620 - 720$  $15y = 900$		4M

	$y = 60$ $60 \times 18 = \text{Sh. } 1080$		<b>1994Q3</b>
8	$5s + 3b = 1750$ .....(i) $3s + b = 850$ .....(ii) $5s + 3b = 1750$ .....(iii) $9s + 3b = 2250$ .....(iv) $4s = 800$ $S = 200$ $B = 250$	B1 M1 A1	<b>1996Q3</b> 3marks
9.	$B.P = \frac{144}{6} \times 100 = 2400$ $S.P = \frac{165}{100} \times \frac{144}{6} \times 100 = 3960$ Let pineapples sold at sh. 72 for every 3 Be x and at sh 60 for every 2 be 144-x. $\frac{144-x}{2} \times 60 + \frac{x}{3} \times 72 = 3960$ $4320 - 30x + 24x = 3960$ $60x = 360$ $x = 60$	M1 MI A1	<b>1996Q13</b> 3marks
10.	Let Ali have a goats $= a + a + 2 + 3(a+2) + a + 2 + 3(a+2-10)$ $= 9a + 6$ $9a + 6 - 17 \times 3$ $9a = 45$ $A = 5$ Odupoy sold 28-10=18goats	B1 M1 A1	<b>1996Q3</b> 4marks
11.	Let the cost be sh c-cup s- spoons $3x + 4s = 324$ $5c - 2s = 228$ $15c + 20s = 1620$ $\frac{15-6s}{26s} = \frac{684}{936}$ $S = 36$ $C = 60$	M1 M1 A1 3	<b>1997Q15</b> Marks
12.	Let number of ten shillings coins be t Number of five shillings coins = 2t Number of one shilling coins = 21- 3t Value = $10t + 2t \times 5 + (21-30 \times 1) = 72$	B1 B1 M1	

	$= 17t = 51$ $t = 3$		A1
			<b>1997Q2</b>
13.	$6a + 4b = 72$ ....(i) $2a + 3b = 3.4$ ....(ii) $6a + 4b = 7.2$ $6a + 9b = 10.2$ $5b = -3$ $b = \frac{3}{5}$ .. $6a + \frac{4 \times 3}{5} = 72$ $6a = 4.8$ $a = 0.8$ one art book = 08kg one biology book = 0.6kg	M1 M1 A1 3	<b>1998Q3</b>
14	a) $4p + 6b = 66$ $2p + 5b = 51$ $4p + 6b = 66$ $4p + 10b = 102$ $4b = 36$ $b = 9$ p = 3 b) let the number of pencils be x $3x + 9(x + 4) = 228$ $12x = 192$ $X = 16$	M1 M1 A1 M1	<b>2000Q16</b> 5 marks
15.	a) $10x + y$ b) $3(x + y) + 8 = 10x + y$ $10y + x = 10x + y + 9$ $2y - 7x = -8$ .....(i) $\frac{Y}{X} = \frac{x}{1} + 1$ .....(ii) $2(x + 1) - 7x = -8$ $x = 2, y = 3$ The number xy is 23	B1 M1 M1 A1	<b>2003Q14</b> 4 marks
16.	$2p + 3b = 78$ .....(i) $3p + 4b = 108$ ....(ii) $8p + 12b = 312$ $9p + 12b = 324$ $P = 12$ $b = 18$	M1 M1 A1 4	<b>2006Q14</b> marks
17.	$x + y = 40$ $y = 40 - x$ sum of the squares in terms of x $s = x^2 + (40-x)^2$ $2x^2 - 80x + 1600$ $\frac{Ds}{Dx} = 4x - 80 = 0$ $Dx$ $4x = 80$ $x = 20$ Sum of the squares $= 20^2 + (40-20)^2$	M1 A1 M1	A1

	$20^2+20^2$ $400+400$ $=800$ <p style="text-align: right;"><b>2007Q11</b></p>	4 marks
18.	Let mambo's salary be x and samba's y $\frac{1}{6}x + \frac{1}{5}y = 14820$ $\frac{1}{8}x + \frac{1}{12}y = 8675$ $5x + 6y = 444600$ $3x + 2y = 208,200$ $5x + 6y = 444,600$ $9x + 6y = 624,620$ $4x = 180000$ $4x = 180,000; x = 45,500$ <p style="text-align: right;"><b>2011Q13</b></p>	M1 M1 M1 <u>A1</u> 4

