Answers

2. Algebra

2.1 Algebraic expressions

1. Check point: (18 – p)x

Stretch point: (y + z + 25) years

2. Check point: g = 54 - 4c

Stretch point: $2y + 21 + d$

3. Check point: $8(3h + j)\ or\ 24h + 8j$

Stretch point: $-2x + 52y$

4. Check point: $4x + 2x^2$

Stretch point: $4a^2b - b^3C$

5. Check point: $\frac{3a\ +5}{6}$

Stretch point: $\frac{9xy + 3z + 4}{4}$

6. Check point: $2(x + 4)$

Stretch point: $25(4x - xy)$

7. Check point: $f(g + h) + j(g + h)$

Stretch point: $(\ cd^2 - 4)(c^2 + 5)$

8. Check point: $\frac{1}{2}$w$(\frac{2+y}{w+y})$

Stretch point: $3x\ (3y + 4z)$

9. Check point: 186 km

Stretch point: (a) 22

(b) 34 m/s

10. Check point: 490

Stretch point: 3 learners

2.2 Linear equations

1. Check point: $ay + 8 = 53$

Stretch point: $10x + 12 = 103$

2. Check point: $5m + 8 = 28$

Stretch point: $8m + 48 = 150$

3. Check point: $n = 163$

Stretch point: $x = \frac{23}{8}$

4. Check point: 360 m

Stretch point: 8

5. Check point: $t + 3p = 1200$

Stretch point: $3x + y = 19$

$x - y = 5$

6. Check point: Packet of milk is KSh. 50, loaf of bread is KSh. 60

Stretch point: Ball : KSh. 1 500, whistle: KSh. 50

7. Check point: Tables : 16, stools: 8

Stretch point: $x = 2, y = 1$, loaves of bread= 2, packets of milk = 1

2.3 Linear Inequalities

1. Check point: $q < 5$

Stretch point: $-3°C < r \leq 4°C$

2. Check point: $y < 5$

Stretch point: $m \geq -8$

3. Check point: $b \geq -5$

Stretch point: $x > 3 \; and \; x \leq -4$

4. Check point: $y < 5.5$

Stretch point: $z \leq 5$, integer widths: 1, 2, 3, 4, 5

5. Check point: $y \geq 4$

Stretch point: $a \leq 1\frac{1}{12}$

6. Check point: $x = -3$

Stretch Point: Width: 5 units

7. Check point: $4\frac{1}{3}$ km

Stretch point: $x < 1.5, 0 \leq x < 1.5$

8. Check point: $x < -3$

Stretch point: $5 \leq x < 8$

9. Stretch point: $2x + y \leq 10, x \geq 2, y \geq 0$

2.4: Matrices

1. Check point: 2 rows, 3 columns

Stretch point: 2 rows, 4 columns

Order is $2 \times 4 \; matrix$

2. Check point: 3×1

Stretch Point: $\begin{pmatrix} 16 & 12 \\ 14 & 10 \\ 8 & 11 \end{pmatrix}$

3. Check point: North: 42, West: 46, South: 44, East: 45

Stretch Point: -3

4. Check point: Because they have the same order

Stretch point: 9

5. Check point: (a) $\begin{pmatrix} 6 \\ 1 \\ 8 \end{pmatrix}, \begin{pmatrix} 2 \\ 2 \\ 1 \end{pmatrix}$

(b) $\begin{pmatrix} 8 \\ 3 \\ 9 \end{pmatrix}$

Stretch point: (a) $\begin{pmatrix} 4 & 1 \\ 4 & -3 \end{pmatrix}$ **(b)** The matrix in part (a) which is $\begin{pmatrix} 4 & 1 \\ 4 & -3 \end{pmatrix}$ represent the stock in the store.

2.5 Equations of a straight line

1. Check point: 1 **Stretch point:** $k = -7$

2. Check point: $y = \frac{10}{7}x$

Stretch point: AB: $5y = 3x + 6$

BC: $2y = -5x - 4$

CA: $-7y = 2x - 27$ or $7y = -2x + 27$

3. Check point: $y = 3x - 18$ **Stretch point:** $k = 5$

4. Check point: $y = x - 5$ **Stretch point:** $y = 2x - 10$

5. Check point: $y - ntercept = -6$ **Stretch point:** $y - intercept = \frac{14}{9}$

6. Check point: (– 1, 2) **Stretch point:** $k = 12$

End of Strand 2 Assessment

1. $(x + 6)\ years$

2. $(200 - x) litres$