



S2

CFE Level 3

Working at Home Workbook

Patterns

<b>Learning Intention. To be able to -</b>
Recognise and continue a basic sequence of numbers
Identify and use a formula for a basic linear pattern
Identify and use more difficult linear patterns

**Recognise and continue a basic sequence of numbers**

Questions 1

Write down the next two numbers in these sequences:

a)	5, 10, 15, ...	b)	72, 64, 56, ...	c)	3, 7, 11, ...
d)	1, 3, 6, 10, ...	e)	800, 400, 200, ...	f)	1, 6, 36, ...
g)	25, 23, 21, ...	h)	4, 11, 18, ...	i)	$\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \dots$

**Identify and use a formula for a basic linear pattern**

Questions 2

For each of these tables, determine a formula or rule connecting the two letters:

(a)	No. of trees (T)	1	2	3	4	5	6	$A = ? \times T$
	No. of apples (A)	40	80	120	160	?	?	

$\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$

(b)	Lengths swam (L)	1	2	3	4	5	6	$T = ? \times L$
	Time in mins (T)	7	14	21	28	?	?	

$\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$

(c)	No. of cakes made (C)	1	2	3	4	5	6	$G = ? \times ?$
	Grams of flour (G)	120	240	360	?	?	?	

$\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$

(d)	No. of inches (I)	1	2	3	4	5	6	$C = ? \times ?$
	No. of centimetres (C)	2.5	5.0	7.5	?	?	?	

$\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$   
 $\underbrace{\quad\quad\quad}_{?}$

(e)	No. of bottles (B)	2	3	4	5	6	$M = ? \times ?$ NOT $M = 660 \times B$
	No. of millilitres (M)	660	990	1320	?	?	

**Identify and use more difficult linear patterns**

Questions 3

For each of these tables, determine a formula or rule connecting the second letter in the table to the first letter.

(a)

Number ( $N$ )	1	2	3	4
Cost ( $C$ )	6	9	12	15

$$C = ? \times N + ?$$

(b)

Length ( $b$ )	1	2	3	4
Area ( $A$ )	13	18	23	28

$$A = ? \times b + ?$$

(c)

Number ( $N$ )	1	2	3	4
Weight ( $W$ )	50	54	58	62

$$W = ? \times N + ?$$

(d)

Temp. ( $T$ )	1	2	3	4
Volume ( $V$ )	19	26	33	40

$$V = ? \times T + ?$$

(e)

Distance ( $D$ )	1	2	3	4
Time ( $T$ )	8.5	10.5	12.5	14.5

$$T = ? \times D + ?$$

(f)

Time ( $T$ )	1	2	3	4
Depth ( $D$ )	2	8	14	20

$$D = ? \times T - ?$$

(g)

Paces ( $P$ )	1	2	3	4
Distance ( $D$ )	5	16	27	38

$$D = ? \times P - ?$$

(h)

Diameter ( $D$ )	1	2	3	4
Perimeter ( $P$ )	93	108	123	138

$$P = ? \times D + ?$$