

Fully-Worked Solutions

PRACTICE 1

Section A

1 Answer: A

2 6, -12, 24, -48
 $x \times (-2) \quad x \times (-2) \quad x \times (-2)$

Answer: C

3 $x = 1 + 1 = 2$

$y = 2 + 1 = 3$

Answer: D

4 $m = 13 + 21 = 34$

$n = 34 + 55 = 89$

Answer: B

5 -19, -12, -5, 2

$+7 \quad +7 \quad +7$

Answer: A

6 $x = 2\,160 \times \frac{1}{2} = 1\,080$

$y = 270 \times \frac{1}{2} = 135$

Answer: B

7 0.8, 1.7, 2.6, 3.5

$+0.9 \quad +0.9 \quad +0.9$

Answer: C

8 $x = 10 - 8 = 2$

Answer: D

9 5, 14, 23, 32, 41

$+9 \quad +9 \quad +9 \quad +9$

Answer: A

10 13, 6, -1, -8

$-7 \quad -7 \quad -7$

Answer: D

11 $T_n = 3 + 9n$

$T_{10} = 3 + 9(10)$

$= 3 + 90$

$= 93$

Answer: D

12 5, 16, 27, 38, 49, 60, 71, 82

Answer: B

13 76, 70, 64, 58, 52, 46, 40, 34, (28)

-6

Answer: C

14 8, -24, 72, -216, 648, -1 944, 5 832, -17 496, 52 488

$x \times (-3)$

Answer: B

Section B

1 (a)

(i)	$1\frac{1}{4}, \frac{3}{4}, \frac{1}{4}, -\frac{1}{4}$ $-\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}$	✓
(ii)	$2.4, 7.2, 21.6, 64.8$ $\times 3 \quad \times 3 \quad \times 3$	✗

(b) (i) 1 200, 600
 $\div 2$

Multiply the previous number by 2.	
Divide the previous number by 2.	✓

(ii) $x = 600 \div 2$
 $= 300$

2 (a) (i) 86, 78, 70, 62, ...
 -8

Pattern: -8

(ii) 480, 240, 120, 60, ...
 $\div 2$

Pattern: $\div 2$

(b) (i) -36, -27, -18, -9, ...
 $+9$

(ii) 45, -90, 180, -360
 $\times (-2)$

3 (a) $8 = 8 + 6(0)$
 $14 = 8 + 6(1)$
 $20 = 8 + 6(2)$
 $26 = 8 + 6(3)$
 $8 + 6n, n = 0, 1, 2, 3, \dots$

$39 = 39 - 7(0)$

$32 = 39 - 7(1)$

$25 = 39 - 7(2)$

$18 = 39 - 7(3)$

$39 - 7n, n = 0, 1, 2, 3, \dots$

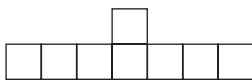
(b) 28, 19, 10, 1, -8, -17, -26, -35, -44, -53, -62, ...
 -9

$T_5 = -8$

$T_{11} = -62$

Section C

1 (a)



Pattern: Add two squares to the previous object.

(b) (i) 8.30, 10.00, 11.30, 1.00, 2.30, 4.00, 5.30, ...

Answer: 1.00 p.m., 2.30 p.m.

(ii) $x = 7$

The departure time of the bus is 5.30 p.m.

(c) (i) $58 = 67 - 9(1)$

$$49 = 67 - 9(2)$$

$$40 = 67 - 9(3)$$

Algebraic expression

$$= 67 - 9n, n = 1, 2, 3, \dots$$

(ii) $T_n = 67 - 9n$

$$T_8 = 67 - 9(8)$$

$$= 67 - 72$$

$$= -5$$

(iii) $T_n = -50$

$$67 - 9n = -50$$

$$67 + 50 = 9n$$

$$9n = 117$$

$$n = 13$$

13th term

2 (a) (i) Add 6 to the previous number.

(ii) $x = -29 + 6$

$$= -23$$

(iii) $-35, -29, -23, -17, -11, -5, 1, 7, \dots$

$$T_8 = 7$$

(b) (i) $5, 9, 13, 17, 21, 25, 29, 33, \dots$

$$\begin{array}{c} \nearrow \\ +4 \end{array}$$

$$T_5 = 21$$

$$T_6 = 25$$

(ii) Total

$$= 5 + 9 + 13 + 17 + 21 + 25 + 29 + 33$$

$$= 152$$

(c) $63, 56, 49, 42, 35, 28, 21, 14, 7, 0$

$$\begin{array}{c} \nearrow \\ -7 \end{array}$$

(i) $T_5 = 35$

(ii) $T_{10} = 0$

10th term