

1.3 Answers

1.3.1 Solution to the Introductory Example

(i)

$$T_1 = 7 \qquad U_1 = 7$$

$$T_2 = 18 \qquad U_2 = 11$$

$$T_3 = 33 \qquad U_3 = 15$$

$$T_4 = 52 \qquad U_4 = 19$$

$$T_5 = 75 \qquad U_5 = 23$$

$$(ii) \quad (a) \quad 75 \qquad (b) \quad 68$$

1.3.2 Solutions to the 1.2 Exercise

Answer 1

(i)

$$T_1 = 3 \qquad U_1 = 3$$

$$T_2 = 13 \qquad U_2 = 10$$

$$T_3 = 30 \qquad U_3 = 17$$

$$T_4 = 54 \qquad U_4 = 24$$

$$T_5 = 85 \qquad U_5 = 31$$

$$T_6 = 123 \qquad U_6 = 38$$

$$T_7 = 168 \qquad U_7 = 45$$

$$T_8 = 220 \qquad U_8 = 52$$

$$(ii) \quad (a) \quad 220 \qquad (b) \quad 190$$

Answer 2

(i)

$$T_1 = 17 \qquad U_1 = 17$$

$$T_2 = 31 \qquad U_2 = 14$$

$$T_3 = 42 \qquad U_3 = 11$$

$$T_4 = 50 \qquad U_4 = 8$$

$$T_5 = 55 \qquad U_5 = 5$$

$$T_6 = 57 \qquad U_6 = 2$$

$$(ii) \quad (a) \quad 57 \qquad (b) \quad 38$$

Answer 3

165

Answer 4**(i)**

$$U_n = 2n + 1$$

(ii)

$$\sum_1^5 (2n + 1)$$

Answer 5

225

Answer 6**(i)**

$$U_n = 3n + 2$$

(ii)

$$\sum_1^9 (3n + 2)$$

Answer 7

$$\sum_1^{11} (11n - 1)$$

Answer 8

$$\sum_1^7 (4 - 3n)$$

Answer 9**(i)** 5, 11, 17, 23, 29, ...**(ii)** 16, 13, 10, 7, 4, ...**(iii)** 11, 4, -3, -10, -17, ...**Answer 10****(i)** $U_n = 8n - 5$ **(ii)** $U_n = 5n + 2$ **(iii)** $U_n = 13 - 4n$ **Answer 11****(i)** When $n = 3$, $6n - 1 = 19$ When $n = 4$, $6n - 1 = 25$ When $n = 5$, $6n - 1 = 31$ When $n = 6$, $6n - 1 = 37$ There are four terms $\square$ **(ii)** $11 - 5 + 1$ is 7 terms**(iii)** $47 - 15 + 1 = 33$ terms