Sequences Problem set 3

P 171

Exercise 6F

1 Write an expression for each series using sigma notation.

a $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8$

b $9 + 16 + 25 + 36 + 49$

c $27 + 25 + 23 + 21 + 19 + 17$

d $240 + 120 + 60 + 30 + 15 + 7.5$

e $5x + 6x + 7x + 8x + 9x + 10x$

f $4 + 7 + 10 + 13 + \cdots + 55$

g $1 + 3 + 9 + 27 + \cdots + 59\,049$

h $a + 2a^2 + 3a^3 + 4a^4 + 5a^5$

2 Write each series as a sum of terms.

a $\sum_{n=1}^{8}(3n+1)$ **b** $\sum_{a=1}^{5}(4^a)$ **c** $\sum_{r=3}^{7}(5(2^r))$ **d** $\sum_{n=5}^{11}(x^n)$

3 Evaluate.

a $\sum_{n=1}^{9}(8n-5)$ **b** $\sum_{r=1}^{5}(3^r)$ **c** $\sum_{m=1}^{7}(m^2)$ **d** $\sum_{x=4}^{10}(7x-4)$

Remember, the word *evaluate* tells you to find the value, so you need to give numerical answers.