UNIT 7 Number Patterns and Sequences

Revision Test 7.1 (Standard)

1. Write down the first 5 multiples of 6.

(2 marks)

2. Find:
   (a) the 4th multiple of 2,
   (b) the 3rd multiple of 12,
   (c) the 6th multiple of 3.

(3 marks)

3. Write down the next 3 numbers in each sequence:
   (a) 4, 7, 10, 13, 16, . . .
   (b) 1, 6, 11, 16, 21, . . .
   (c) 20, 19, 18, 17, 16, . . .
   (d) 22, 24, 26, 28, 30, . . .
   (e) 1, 8, 15, 22, 29, . . .

(10 marks)

4. The sequence 1, 2, 3, 4, 5, . . . is put into each of these number machines. What comes out of each number machine?
   (a) 1, 2, 3, 4, 5, . . .
   (b) 1, 2, 3, 4, 5, . . .
   (c) 1, 2, 3, 4, 5, . . .
   (d) 1, 2, 3, 4, 5, . . .

(8 marks)
Revision Test 7.1

5. The even numbers are put into these number machines; what comes out?
   (a) 2, 4, 6, 8, . . .  
   (b) 2, 4, 6, 8, . . .

   ![Diagram](image)

   (4 marks)

6. What are the missing numbers in these machines?
   (a)  
   (b)  
   (c)  

   ![Diagram](image)

   (3 marks)
UNIT 7 Number Patterns and Sequences

1. Write down the first 6 multiples of 7.  

(2 marks)

2. Find:  
   (a) the 8th multiple of 10,  
   (b) the 4th multiple of 21,  
   (c) the 100th multiple of 6.  

(3 marks)

3. Write down the first 4 terms of the sequence which has the \( n \)th term formula:  
   (a) \( 4n \),  
   (b) \( 5n + 4 \),  
   (c) \( 6n - 3 \)  

(6 marks)

4. Write down the next 3 terms in each sequence below:  
   (a) 10, 17, 24, 31, 38, . . .  
   (b) 11, 14, 17, 20, 23, . . .  
   (c) 101, 99, 97, 95, 93, . . .  
   (d) 5, 11, 17, 23, 29, . . .  

(8 marks)

5. The sequence 2, 4, 6, 8, 10, . . . is put into each number machine below; what comes out?  
   (a)  
   (b)  
   (c)  

(6 marks)
Revision Test 7.2

6. What does each of these number machines do?
   (a) 1, 2, 3, 4, 5, . . .

   ![Diagram](image)
   7, 8, 9, 10, 11, . . .

   (b) 1, 2, 3, 4, 5, . . .

   ![Diagram](image)
   12, 24, 36, 48, 60, . . .

   (4 marks)

7. What is the $n$th term formula for this sequence?
   3, 6, 9, 12, 15, . . .

   (1 mark)
UNIT 7 Number Patterns and Sequences

Revision Test 7.3 (Express)

1. Write down the first 5 multiples of 17. (2 marks)

2. What are the missing numbers in these statements?
   (a) 54 is the 3rd multiple of . . . . .
   (b) 102 is the . . . . multiple of 3. (2 marks)

3. Write down the first 5 terms of the sequences described by these \(n\)th term formulae:
   (a) \(8n\)
   (b) \(3n - 2\)
   (c) \(5n + 100\)
   (d) \(n^2 - 1\) (8 marks)

4. What are the \(n\)th term formulae for these sequences?
   (a) 9, 18, 27, 36, 45, . . .
   (b) 10, 19, 28, 37, 46, . . .
   (c) 3, 7, 11, 15, 19, . . .
   (d) 12, 11, 10, 9, 8, . . . (8 marks)

5. Write down the next 3 terms of each of the following sequences:
   (a) 17, 28, 39, 50, 61, . . .
   (b) 14, 11, 8, 5, 2, . . .
   (c) 2, 5, 10, 17, 26, . . .
   (d) 1, 2, 4, 7, 11, . . . (8 marks)

6. Fill in the missing operations from this double number machine:
   \[ 1, 2, 3, 4, 5, 6, \ldots \]
   \[ ?, \rightarrow ?, \rightarrow 2, 5, 8, 11, 14, \ldots \] (2 marks)
Revision Test 7.1 (Standard)  

1. (a) 6, 12, 18, 24, 30 (B1 for one mistake) B2 (2 marks)

2. (a) $4 \times 2 = 8$ B1
   (b) $3 \times 12 = 36$ B1
   (c) $6 \times 3 = 18$ B1 (3 marks)

3. (a) 19, 22, 25 (B1 for one mistake) B2
   (b) 26, 31, 36 (B1 for one mistake) B2
   (c) 15, 14, 13 (B1 for one mistake) B2
   (d) 32, 34, 36 (B1 for one mistake) B2
   (e) 36, 43, 50 (B1 for one mistake) B2 (10 marks)

4. (a) 4, 5, 6, 7, 8, ... (B1 for one mistake) B2
   (b) 2, 4, 6, 8, 10, ... (B1 for one mistake) B2
   (c) 9, 10, 11, 12, 13, ... (B1 for one mistake) B2
   (d) 4, 8, 12, 16, 20, ... (B1 for one mistake) B2 (8 marks)

5. (a) 1, 3, 5, 7, ... (B1 for one mistake) B2
   (b) 4, 8, 12, 16, ... (B1 for one mistake) B2 (4 marks)

6. (a) 2 B1
   (b) 2 B1
   (c) 3 B1 (3 marks)

(TOTAL 30 MARKS)
Revision Test 7.2 (Academic) Answers

1. 7, 14, 21, 28, 35, 42  (B1 for one mistake)  B2  (2 marks)

2. (a)  80  
  (b)  84  
  (c)  600  
       B1  B1  B1  (3 marks)

3. (a)  4, 8, 12, 16  (B1 for one mistake)  B2  
  (b)  9, 14, 19, 24  (B1 for one mistake)  B2  
  (c)  3, 9, 15, 21  (B1 for one mistake)  B2  (6 marks)

4. (a)  45, 52, 59  (B1 for one mistake)  B2  
  (b)  26, 29, 32  (B1 for one mistake)  B2  
  (c)  91, 89, 87  (B1 for one mistake)  B2  
  (d)  35, 41, 47  (B1 for one mistake)  B2  (8 marks)

5. (a)  6, 12, 18, 24, 30, ...  (B1 for one mistake)  B2  
  (b)  9, 11, 13, 15, 17, ...  (6 marks)
  (c)  1, 3, 5, 7, 9, ...  

6. (a)  + 6  
  (b)  × 12  
        B2  B2  (4 marks)

7. 3n  
    B1  (1 mark)

(TOTAL 30 MARKS)
Revision Test 7.3 (Express) Answers

1. 17, 34, 51, 68, 85 (B1 for one mistake) B2 (2 marks)

2. (a) 18 B1
   (b) 34th B1 (2 marks)

3. (a) 8, 16, 24, 32, 40 (B1 for one mistake) B2
   (b) 1, 4, 7, 11, 14
   (c) 105, 110, 115, 120, 125 (B1 for one mistake) B2
   (d) 0, 3, 8, 15, 24 (B1 for one mistake) B2 (8 marks)

4. (a) $9n$ (B1 for one mistake) B2
   (b) $9n + 1$ (B1 for one mistake) B2
   (c) $4n - 1$ (B1 for one mistake) B2
   (d) $13 - n$ (B1 for one mistake) B2 (8 marks)

5. (a) 72, 83, 94 (B1 for one mistake) B2
   (b) $-1, -4, -7$ (B1 for one mistake) B2
   (c) 37, 50, 65 (B1 for one mistake) B2
   (d) 16, 22, 29 (B1 for one mistake) B2 (8 marks)

6. $\times 3$ and $-1$ B1 B1 (2 marks)

(TOTAL 30 MARKS)