

## Exercise 2015-9EC-00001(1)

(1) Write the next five numbers in each sequence:

Also write the pattern in words:

- (a)  $-3 ; -11 ; -19 ; -27 ; \dots$
- (b)  $5 ; 8 ; 11 ; 14 ; \dots$
- (c)  $98\,415 ; 32\,805 ; 10\,935 ; 3\,645 ; \dots$
- (d)  $1 ; 1 ; 3 ; 4 ; 5 ; 9 ; 7 ; 16 ; 9 ; \dots$

(2) The general term for a sequence is  $T_n = 5n + 3$ .

- (a) Determine the first four terms of the sequence.
- (b) Determine the 85<sup>th</sup> term of the sequence.
- (c) Which term in the sequence is equal to 523?

(3) Complete the following table and answer the questions:

|     |                      |    |    |     |   |    |     |    |
|-----|----------------------|----|----|-----|---|----|-----|----|
| (a) | Position in sequence | 1  | 2  | 3   | 7 | 11 |     | 35 |
|     | Term                 | -4 | -7 | -10 |   |    | -85 |    |

- (b) Describe the pattern in words.
- (c) Determine the general term of the second difference of the above sequence as  $T_n = \dots$
- (d) Determine the 100<sup>th</sup> term of the sequence.

(4) Fill in the missing numbers for each sequence and determine the general term ( $T_n$ ):

- (a)  $\underline{\hspace{1cm}} ; 6 ; 12 ; 24 ; \underline{\hspace{1cm}} ; \underline{\hspace{1cm}} ; \underline{\hspace{1cm}} ; 384$
- (b)  $\underline{\hspace{1cm}} ; \underline{\hspace{1cm}} ; \underline{\hspace{1cm}} ; \underline{\hspace{1cm}} ; 5\frac{1}{2} ; 4\frac{3}{4} ; 4$
- (c)  $136 ; \underline{\hspace{1cm}} ; 142 ; \underline{\hspace{1cm}} ; 148 ; \underline{\hspace{1cm}} ; 154 ; \underline{\hspace{1cm}}$