Grade 6 Mathematics

Chapter 1 : Patterns in mathematics

Worksheet -1

Name: _____

Date: _____

Total Marks: 20

A. Short Answer – Fill in the blanks (1 mark each × 4 = 4 marks)

1. The numbers 1, 3, 6, 10, 15, … are called _____ numbers.

2. The next square number after 36 is _____.

3. The numbers 1, 7, 19, 37, … are called _____ numbers.

4. In the sequence of powers of 2: 1, 2, 4, 8, 16, the next two terms are _____ and _____.

B. Complete the pattern (2 marks each × 3 = 6 marks)

5. Draw the figure in the triangular numbers sequence. Write the number it represents.(First 5)

6. Draw the next figure in the hexagonal numbers sequence: 1, 7, 19 ....

7. Complete the pattern of powers of 3: 1, 3, 9, 27, 81, ____ , ____

C. Reasoning Questions (2 marks each × 3 = 6 marks)

8. a)By adding the first 5 odd numbers (1 + 3 + 5 + 7 + 9), what result do you get? What is special about this number?

b)Why are 1,8,27,64,125....called cubes?

9. What happens when you start to add up hexagonal numbers, i.e take 1,1+7,1+7+19,1+7+19+37.....? Which sequence do you get ? Explain.

10. If you add the pairs of consecutive triangular numbers (1 + 3, 3 + 6, 6 + 10, …), what new sequence do you get?

D. Shape and Number Link (2 marks each × 2 = 4 marks)

11. In the sequence of regular polygons, write the number of sides for:

a) Triangle → _____

b) Hexagon → _____

c) Decagon → _____

12. In a complete graph with 4 points, how many lines are there? Draw the diagram and count.

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C. Reasoning Questions (2 marks each × 3 = 6 marks)

8. By adding the first 5 odd numbers (1 + 3 + 5 + 7 + 9), what result do you get? What is special about this number?

9. What will be the sum: 1 + 2 + 3 + … + 10? Show working.

10. If you add the pairs of consecutive triangular numbers (1 + 3, 3 + 6, 6 + 10, …), what new sequence do you get?

D. Shape and Number Link (2 marks each × 2 = 4 marks)

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12. In a complete graph with 4 points, how many lines are there? Draw the diagram and count.