SQUARES AND SQUARE ROOTS

SOME MORE INTERESTING PATTERNS

EXERCISE

Q.1 Observe the following pattern and find the missing digits.

$11^2 = 121$

$101^2 = 10201$

$1001^2 = 1002001$

$100001^2 = 1$ 2 1

$10000001^2 =$ .....

Q.2 Observe the following pattern and supply the missing numbers.

$11^2 = 1\ 2\ 1$

$101^2 = 1\ 0\ 2\ 0\ 1$

$10101^2 = 102030201$

$1010101^2 =$ .....^{2}

$= 10203040504030201$

Q.3 Using the given pattern, find the missing numbers.

$1^2 + 2^2 + 2^2 = 3^2$

$2^2 + 3^2 + 6^2 = 7^2$

$3^2 + 4^2 + 12^2 = 13^2$

$4^2 + 5^2 + -^2 = 21^2$

$5^2 + \_^2 + 30^2 = 31^2$

$6^2 + 7^2 + \_^2 = \_^2$

Q.4 Without adding, find the sum.

(i) 1 + 3 + 5 + 7 + 9

(ii) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19

(iii) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23

Q.5 (i) Express 49 as the sum of first 7 odd numbers.

(ii) Express 121 as the sum of first 11 odd numbers.

Q.6 How many numbers lie between squares of the following numbers ?

(i) 12 and 13

(ii) 25 and 26

(iii) 99 and 100

Q.7 Write a pythagorena triplet whose one member is.

(i) 6 (ii) 14

(iii) 16 (iv) 18

ANSWER KEY

1. 10000200001, 100000020000001

2. 1020304030201, 101010101^2

3. 20, 6, 42, 43

4. (i) 25 (ii) 100 (iii) 144

5. (i) 1 + 3 + 5 + 7 + 9 + 11 + 13

(ii) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21

6. (i) 24 (ii) 50 (iii) 198

7. (i) 6, 8, 10 (ii) 14, 48, 50

(iii) 16, 63,65 (iv) 18, 80, 82