Some Questions for Practice

1. What will be the unit digit of the squares of the following numbers?
    (i) 81   (ii) 272   (iii) 799   (iv) 3853   (v) 1234   (vi) 26387
    (vii) 52698   (viii) 99880   (ix) 12796   (x) 55555

2. The following numbers are obviously not perfect squares. Give reason.
    (i) 1057   (ii) 23453   (iii) 7928   (iv) 222222   (v) 64000
    (vi) 89722   (vii) 222000   (viii) 505050

3. The squares of which of the following would be odd numbers?
    (i) 431   (ii) 2826   (iii) 7779   (iv) 82004

4. Observe the following pattern and supply the missing numbers.
    $11^2 = 1\ 2\ 1$
    $101^2 = 1\ 0\ 2\ 0\ 1$
    $10101^2 = 102030201$
    $1010101^2 = \ldots\ldots\ldots\ldots\ldots\ldots\ldots$
    $\ldots\ldots\ldots^2 = 10203040504030201$

5. Using the given pattern, find the missing numbers.
    $1^2 + 2^2 + 2^2 = 3^2$
    $2^2 + 3^2 + 6^2 = 7^2$
    $3^2 + 4^2 + 12^2 = 13^2$
    $4^2 + 5^2 + \underline{\ }^2 = 21^2$
    $5^2 + \underline{\ }^2 + 30^2 = 31^2$
    $6^2 + 7^2 + \underline{\ }^2 = \underline{\ \ }^2$

6. Without adding, find the sum.
    (i) $1 + 3 + 5 + 7 + 9$
    (ii) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$
    (iii) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23$

7. (i) Express 49 as the sum of 7 odd numbers.
    (ii) Express 121 as the sum of 11 odd numbers.

8. How many numbers lie between squares of the following numbers?
    (i) 12 and 13   (ii) 25 and 26   (iii) 99 and 100

9. Can we say whether the following numbers are perfect squares? How do we know?
   (i) 1057   (ii) 23453   (iii) 7928   (iv) 222222   (v) 1069   (vi) 2061

10. Write five numbers which you can decide by looking at their units digit that they are not square numbers.

11. Write five numbers which you cannot decide just by looking at their units digit (or units place) whether they are square numbers or not.

12. Which of the following numbers would have digit 6 at unit place.
    (i) 19^2 (ii) 24^2 (iii) 26^2 (iv) 36^2 (v) 34^2

13. What will be the "one's digit" in the square of the following numbers?
    (i) 1234   (ii) 26387   (iii) 52698   (iv) 99880   (v) 21222   (vi) 9106

14. The square of which of the following numbers would be an odd number/an even number? Why?
    (i) 727   (ii) 158   (iii) 269   (iv) 1980

15. What will be the number of zeros in the square of the following numbers?
    (i) 60   (ii) 400   (iii) 21000

16. How many natural numbers lie between 9^2 and 10^2 ? Between 11^2 and 12^2?

17. How many non square numbers lie between the following pairs of numbers
    (i) 100^2 and 101^2 (ii) 90^2 and 91^2 (iii) 1000^2 and 1001^2

18. Find whether each of the following numbers is a perfect square or not?
    (i) 121   (ii) 55   (iii) 81   (iv) 49   (v) 69

19. Express the following as the sum of two consecutive integers.
    (i) 21^2 (ii) 13^2 (iii) 11^2 (iv) 19^2

20. Perfect square can be represented as the sum of two consecutive integers. Do you think the reverse is also true? Give example to support your answer.

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