Ex 6.1 Class 8 Maths Question 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) 20387
(vii) 52698
(viii) 99880
(ix) 12796
(x) 55555
Solution:
(i) Unit digit of 81^2 = 1
(ii) Unit digit of 272^2 = 4
(iii) Unit digit of 799^2 = 1
(iv) Unit digit of 3853^2 = 9
(v) Unit digit of 1234^2 = 6
(vi) Unit digit of 26387^2 = 9
(vii) Unit digit of 52698^2 = 4
(viii) Unit digit of 99880^2 = 0
(ix) Unit digit of 12796^2 = 6
(x) Unit digit of 55555^2 = 5

Ex 6.1 Class 8 Maths Question 2.
The following numbers are not perfect squares. Give reason.
(i) 1057
(ii) 23453
(iii) 7928
(iv) 222222
(v) 64000
(vi) 89722
(vii) 222000
(viii) 505050
Solution:
(i) 1057 ends with 7 at unit place. So it is not a perfect square number.
(ii) 23453 ends with 3 at unit place. So it is not a perfect square number.
(iii) 7928 ends with 8 at unit place. So it is not a perfect square number.
(iv) 222222 ends with 2 at unit place. So it is not a perfect square number.
(v) 64000 ends with 3 zeros. So it cannot a perfect square number.
(vi) 89722 ends with 2 at unit place. So it is not a perfect square number.
(vii) 22000 ends with 3 zeros. So it can not be a perfect square number.
(viii) 505050 ends with 1 zero. So it is not a perfect square number.

Ex 6.1 Class 8 Maths Question 3.
The squares of which of the following would be odd numbers?

(i) 431
(ii) 2826
(iii) 7779
(iv) 82004
Solution:
(i) 431^2 is an odd number.
(ii) 2826^2 is an even number.
(iii) 7779^2 is an odd number.
(iv) 82004^2 is an even number.

Ex 6.1 Class 8 Maths Question 4.
Observe the following pattern and find the missing digits.
$11^2 = 121$
$101^2 = 10201$
$1001^2 = 1002001$
$100001^2 = 1…2…1$
$10000001^2 = ……$
Solution:
According to the above pattern, we have
$100001^2 = 10000200001$
$10000001^2 = 100000020000001$

Ex 6.1 Class 8 Maths Question 5.
Observe the following pattern and supply the missing numbers.
$11^2 = 121$
$101^2 = 10201$
$10101^2 = 102030201$
$1010101^2 = …….$
$…….^2 = 10203040504030201$
Solution:
According to the above pattern, we have
$1010101^2 = 1020304030201$
$101010101^2 = 10203040504030201$

Ex 6.1 Class 8 Maths Question 6.
Using the given pattern, find the missing numbers.
$1^2 + 2^2 + 2^2 = 3^2$
$2^2 + 3^2 + 6^2 = 7^2$
$3^2 + 4^2 + 12^2 = 13^2$
$4^2 + 5^2 + ….^2 = 21^2$
$5^2 + ….^2 + 30^2 = 31^2$
$6^2 + 7^2 + …..^2 = ……^2$
Solution:

According to the given pattern, we have
$4^2 + 5^2 + 20^2 = 21^2$
$5^2 + 6^2 + 30^2 = 31^2$
$6^2 + 7^2 + 42^2 = 43^2$

Ex 6.1 Class 8 Maths Question 7.
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
Solution:
We know that the sum of n odd numbers = n^2
(i) $1 + 3 + 5 + 7 + 9 = (5)^2 = 25$ [$\because$ n = 5]
(ii) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 = (10)^2 = 100$ [$\because$ n = 10]
(iii) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23 = (12)^2 = 144$ [$\because$ n = 12]

Ex 6.1 Class 8 Maths Question 8.
(i) Express 49 as the sum of 7 odd numbers.
(ii) Express 121 as the sum of 11 odd numbers.
Solution:
(i) 49 = 1 + 3 + 5 + 7 + 9 + 11 + 13 (n = 7)
(ii) 121 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 (n = 11)

Ex 6.1 Class 8 Maths Question 9.
How many numbers lie between squares of the following numbers?
(i) 12 and 13
(ii) 25 and 26
(iii) 99 and 100.
Solution:
(i) We know that numbers between n^2 and $(n + 1)^2 = 2n$
Numbers between 12^2 and $13^2 = (2n) = 2 \times 12 = 24$
(ii) Numbers between 25^2 and $26^2 = 2 \times 25 = 50$ ($\because$ n = 25)
(iii) Numbers between 99^2 and $100^2 = 2 \times 99 = 198$ ($\because$ n = 99)