



EXERCISE 6.3

1. What could be the possible 'one's digits of the square root of each of the following numbers?

(i) 9801

(ii) 99856

(iii) 998001

(iv) 657666025

Sol: The possible digit at one's place of the square root of:

(i) 9801 can be 1 or 9.

$$[\because 1 \times 1 = 1 \text{ and } 9 \times 9 = 81]$$

2. Without doing any calculation, find the numbers which are surely not perfect squares.

(i) 152

(ii) 257

(iii) 408

(iv) 441

Sol: We know that the ending digit of perfect square is 0, 1, 4, 5, 6, and 9.

\therefore A number ending in 2, 3, 7 or 8 can never be a perfect square.

(i) 153, cannot be a perfect square.

3. Find the square roots of. 100 and 169 by the method of repeated subtraction.

Sol: (i) $\sqrt{100}$

We have	$100 - 1 = 99$	$99 - 3 = 96$	$96 - 5 = 91$
	$91 - 7 = 84$	$84 - 9 = 75$	$75 - 11 = 64$
	$64 - 13 = 51$	$51 - 15 = 36$	$36 - 17 = 19$
	$19 - 19 = 0$		

\therefore We reach at 0 by successive subtraction of 10 odd numbers.

$$\therefore \sqrt{100} = 10.$$

(ii) $\sqrt{169}$

We have	$169 - 1 = 168$	$168 - 3 = 165$	$165 - 5 = 160$
	$160 - 7 = 153$	$153 - 9 = 144$	$144 - 11 = 133$
	$133 - 13 = 120$	$120 - 15 = 105$	$105 - 17 = 88$
	$88 - 19 = 69$	$69 - 21 = 48$	$48 - 23 = 25$
	$25 - 25 = 0$		

\therefore We have at 0 by successive subtraction of 13 odd numbers.

$$\therefore \sqrt{169} = 13.$$

4. Find the square roots of. (by the method of repeated subtraction.)

(i) 144

(ii) 256

(iii) 441

(iv) 676