



Squares and Square Roots Ex 3.1 Q6

Answer :

(i) $189 = 3 \times 3 \times 3 \times 7$

3	189
3	63
3	21
7	7
	1

Grouping them into pairs of equal factors:

$$189 = (3 \times 3) \times 3 \times 7$$

The factors 3 and 7 cannot be paired. Hence, 189 is not a perfect square.

(ii) $225 = 3 \times 3 \times 5 \times 5$

3	225
3	75
5	25
5	5
	1

Grouping them into pairs of equal factors:

$$225 = (3 \times 3) \times (5 \times 5)$$

There are no left out of pairs. Hence, 225 is a perfect square.

(iii) $2048 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

2	2048
2	1024
2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

Grouping them into pairs of equal factors:

$$2048 = (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times 2$$

The last factor, 2 cannot be paired. Hence, 2048 is not a perfect square.

(iv) $343 = 7 \times 7 \times 7$

7	343
7	49
7	7
	1

Grouping them into pairs of equal factors:

$$343 = (7 \times 7) \times 7$$

The last factor, 7 cannot be paired. Hence, 343 is not a perfect square.

(v) $441 = 3 \times 3 \times 7 \times 7$

3	441
3	147
7	49
7	7
	1

Grouping them into pairs of equal factors:

$$441 = (3 \times 3) \times (7 \times 7)$$

There are no left out of pairs. Hence, 441 is a perfect square.

(vi) $2916 = 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$

2	2916
2	1458
3	729
3	243
3	81
3	27
3	9
3	3
	1

Grouping them into pairs of equal factors:

$$2916 = (2 \times 2) \times (3 \times 3) \times (3 \times 3) \times (3 \times 3)$$

There are no left out of pairs. Hence, 2916 is a perfect square.

(vii) $11025 = 3 \times 3 \times 5 \times 5 \times 7 \times 7$

3	11025
3	3675
5	1225
5	245
7	49
7	7
	1

Grouping them into pairs of equal factors:

$$11025 = (3 \times 3) \times (5 \times 5) \times (7 \times 7)$$

There are no left out of pairs. Hence, 11025 is a perfect square.

$$(viii) 3549 = 3 \times 7 \times 13 \times 13$$

3	3549
7	1183
13	169
13	13
	1

Grouping them into pairs of equal factors:

$$3549 = (13 \times 13) \times 3 \times 7$$

The last factors, 3 and 7 cannot be paired. Hence, 3549 is not a perfect square.

***** END *****