Exercise 3A

Q1

**Answer :**

A perfect square can always be expressed as a product of equal factors.

(i)

Resolving into prime factors:

$441 = 49 \times 9 = 7 \times 7 \times 3 \times 3 = 7 \times 3 \times 7 \times 3 = 21 \times 21 = (21)^2$

Thus, 441 is a perfect square.

(ii)

Resolving into prime factors:

$576 = 64 \times 9 = 8 \times 8 \times 3 \times 3 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 24 \times 24 = (24)^2$

Thus, 576 is a perfect square.

(iii)

Resolving into prime factors:

$11025 = 441 \times 25 = 49 \times 9 \times 5 \times 5 = 7 \times 7 \times 3 \times 3 \times 5 \times 5 = 7 \times 5 \times 3 \times 7 \times 5 \times 3$
$= 105 \times 105 = (105)^2$

Thus, 11025 is a perfect square.

(iv)

Resolving into prime factors:

$1176 = 7 \times 168 = 7 \times 21 \times 8 = 7 \times 7 \times 3 \times 2 \times 2 \times 2$

1176 cannot be expressed as a product of two equal numbers. Thus, 1176 is not a perfect square.

(v)

Resolving into prime factors:

$5625 = 225 \times 25 = 9 \times 25 \times 25 = 3 \times 3 \times 5 \times 5 \times 5 \times 5 = 3 \times 5 \times 5 \times 3 \times 5 \times 5 = 75$
$\times 75 = (75)^2$

Thus, 5625 is a perfect square.

(vi)

Resolving into prime factors:

$9075 = 25 \times 363 = 5 \times 5 \times 3 \times 11 \times 11 = 55 \times 55 \times 3$

9075 is not a product of two equal numbers. Thus, 9075 is not a perfect square.

(vii)

Resolving into prime factors:

$$4225 = 25 \times 169 = 5 \times 5 \times 13 \times 13 = 5 \times 13 \times 5 \times 13 = 65 \times 65 = (65)^2$$

Thus, 4225 is a perfect square.

(viii)

Resolving into prime factors:

$$1089 = 9 \times 121 = 3 \times 3 \times 11 \times 11 = 3 \times 11 \times 3 \times 11 = 33 \times 33 = (33)^2$$

Thus, 1089 is a perfect square.

********** END **********