Q4

Answer :

(i) Resolving 1575 into prime factors:

$$1575 = 3 \times 3 \times 5 \times 5 \times 7 = 3^2 \times 5^2 \times 7$$

Thus, to get a perfect square, the given number should be divided by 7

New number obtained $= \left(3^2 \times 5^2\right) = \left(3 \times 5\right)^2 = \left(15\right)^2$

Hence, the new number is the square of 15

(ii) Resolving 9075 into prime factors:

$$9075 = 3 \times 5 \times 5 \times 11 \times 11 = 3 \times 5^2 \times 11^2$$

Thus, to get a perfect square, the given number should be divided by 3

New number obtained $= \left(5^2 \times 11^2\right) = \left(5 \times 11\right)^2 = \left(55\right)^2$

Hence, the new number is the square of 55

(iii) Resolving 4851 into prime factors:

$$4851 = 3 \times 3 \times 7 \times 7 \times 11 = 3^2 \times 7^2 \times 11$$

Thus, to get a perfect square, the given number should be divided by 11

New number obtained $= \left(3^2 \times 7^2\right) = \left(3 \times 7\right)^2 = \left(21\right)^2$

Hence, the new number is the square of 21

(iv) Resolving 3380 into prime factors:

$$3380 = 2 \times 2 \times 5 \times 13 \times 13 = 2^2 \times 5 \times 13^2$$

Thus, to get a perfect square, the given number should be divided by 5

New number obtained $= \left(2^2 \times 13^2\right) = \left(2 \times 13\right)^2 = \left(26\right)^2$

Hence, the new number is the square of 26

(v) Resolving 4500 into prime factors:

$$4500 = 2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 5 = 2^2 \times 3^2 \times 5^2 \times 5$$

Thus, to get a perfect square, the given number should be divided by 5

New number obtained $= \left(2^2 \times 3^2 \times 5^2\right) = \left(2 \times 3 \times 5\right)^2 = \left(30\right)^2$

Hence, the new number is the square of 30

(vi) Resolving 7776 into prime factors:

$$7776 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 = 2^2 \times 2^2 \times 2 \times 3^2 \times 3^2 \times 3$$

Thus, to get a perfect square, the given number should be divided by 6 whish is a product of 2 and 3

New number obtained $= \left(2^2 \times 2^2 \times 3^2 \times 3^2\right) = \left(2 \times 2 \times 3 \times 3\right)^2 = \left(36\right)^2$

Hence, the new number is the square of 36

(vii) Resolving 8820 into prime factors:

$$8820 = 2 \times 2 \times 3 \times 3 \times 5 \times 7 \times 7 = 2^2 \times 3^2 \times 5 \times 7^2$$

Thus, to get a perfect square, the given number should be divided by 5

New number obtained $= \left(2^2 \times 3^2 \times 7^2\right) = \left(2 \times 3 \times 7\right)^2 = \left(42\right)^2$

Hence, the new number is the square of 42

(viii) Resolving 4056 into prime factors:

$$4056 = 2 \times 2 \times 2 \times 3 \times 13 \times 13 = 2^2 \times 2 \times 3 \times 13^2$$

Thus, to get a perfect square, the given number should be divided by 6, which is a product of 2 and 3

New number obtained $= \left(2^2 \times 13^2\right) = \left(2 \times 13\right)^2 = \left(26\right)^2$

Hence, the new number is the square of 26

Q5

Answer:

The first three digit number (100) is a perfect square. Its square root is 10.

The number before 10 is 9.

Square of $9 = (9)^2 = 81$

Thus, the largest 2 digit number that is a perfect square is 81.

Q6
Answer :

The largest 3 digit number is 999.

The number whose square is 999 is 31.61.

Thus, the square of any number greater than 31.61 will be a 4 digit number. Therefore, the square of 31 will be the greatest 3 digit perfect square.

$31^2 = 31 \times 31 = 961$

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