



Grade 8th

Square and Square Roots

Q1) Fill in the blank

i) There are _____ perfect squares between 1 and 50.

ii) 68^2 will have _____ at the unit place.

iii) Number of natural numbers between 15^2 and 16^2 is _____.

iv) $\sqrt{176} + \sqrt{2401} =$ _____

Q2) Find the square root of the following: i) $\sqrt{\frac{225}{441}}$ ii) $\sqrt{\frac{625}{1296}}$

Q3) Find the least number which must be subtracted from 2050 to make it a perfect square. Also find the square root of the perfect square so obtained.

Q4) Find the square root of 390625 by long division method.

Q5) Find the smallest number by which 9408 must be multiplied so that the product is a perfect square. Also find square root of number so obtained.

Q6) Find the Pythagorean triplet in which one of the members is 12.

Q7) Find the square root of 298116 by prime factorization method.

Q8) A General arranges his soldiers in rows to form a square. He finds that in doing so 60 soldiers are left out. If total number of soldiers are 8160, find number of soldiers in each row.



Answer Key

A1) i) 6 ii) 4 iii) 30 (2n where n=15) iv $\sqrt{176 + 49} = \sqrt{225} = 15$

A2) $\frac{15}{21} = \frac{5}{7}$ ii) $\frac{25}{36} = \frac{5}{6}$

A3) 25,45

8A4) 625

$$\begin{array}{r}
 625 \\
 \hline
 6 \quad 390625 \\
 \quad 36 \\
 \hline
 122 \quad 306 \\
 \quad 2 \quad 244 \\
 \hline
 1245 \quad 6225 \\
 \quad 5 \quad 6225 \\
 \quad \quad 0 \\
 \hline
 \end{array}$$

A5) 3, 168

A6) 12,35,37

$$2m = 12$$

$$M=6$$



$$M^2-1=36-1=35$$

$$M^2+1=36+1=37$$

Pythagorean triplets = (12, 35, 37)

A7) 546

$$298116 = 2^2 \times 3^2 \times 7^2 \times 13^2$$

$$2 \times 3 \times 7 \times 13 = 546$$

A8)

Total soldiers = 8160

60 soldiers left out. Remaining soldiers = 8100

$$\sqrt{8100} = 90$$

Therefore, 90 soldiers in each row. $90 \times 90 = 8100$