

Worksheet -13

Subject: - Mathematics

Class: - VIII

Teacher: - Ms. Neeru

Name: _____ Class & Sec: _____ Roll No. _____ Date: 26.08.2020

Problems

$$1. \sqrt{\frac{625}{121}} = \frac{\sqrt{625}}{\sqrt{121}} = \frac{25}{11}$$

$$2. \sqrt{\frac{3136}{900}} = \frac{\sqrt{3136}}{\sqrt{900}} = \frac{56}{30} = \frac{28}{15}$$

$$3. \sqrt{1600 \times 441} = \sqrt{1600} \times \sqrt{441} \\ = 40 \times 21 = 840$$

$$4. \sqrt{2304 \times 81} = \sqrt{2304} \times \sqrt{81} = 48 \times 9 = 432$$

$$5. \sqrt{289} + \sqrt{361} = 17 + 19 = 36$$

Teacher's Signature

Ex 6.3

Question 9:

Find the smallest square number that is divisible by each of the numbers 4, 9 and 10.

Answer 9:

L.C.M. of 4, 9 and 10 is 180.

Prime factors of 180 = $2 \times 2 \times 3 \times 3 \times 5$

Here, prime factor 5 has no pair. Therefore 180 must be multiplied by 5 to make it a perfect square.

$$\therefore 180 \times 5 = 900$$

Hence, the smallest square number which is divisible by 4, 9 and 10 is 900.

2	180
2	90
3	45
3	15
5	5
	1

Question 10:

Find the smallest square number that is divisible by each of the numbers 8, 15 and 20.

Answer 10:

L.C.M. of 8, 15 and 20 is 120.

Prime factors of 120 = $2 \times 2 \times 2 \times 3 \times 5$

Here, prime factor 2, 3 and 5 has no pair. Therefore 120 must be multiplied by

$2 \times 3 \times 5$ to make it a perfect square.

$$\therefore 120 \times 2 \times 3 \times 5 = 3600$$

Hence, the smallest square number which is divisible by 8, 15 and 20 is 3600.

2	120
2	60
3	30
3	15
5	5
	1

Example 11: Find the greatest 4-digit number which is a perfect square.

Solution: Greatest number of 4-digits = 9999. We find $\sqrt{9999}$ by long division method. The remainder is 198. This shows 99^2 is less than 9999 by 198.

This means if we subtract the remainder from the number, we get a perfect square. Therefore, the required perfect square is $9999 - 198 = 9801$.

And, $\sqrt{9801} = 99$

Example 12: Find the least number that must be added to 1300 so as to get a perfect square. Also find the square root of the perfect square.

Solution: We find $\sqrt{1300}$ by long division method. The remainder is 4.

This shows that $36^2 < 1300$.

Next perfect square number is $37^2 = 1369$.

Hence, the number to be added is $37^2 - 1300 = 1369 - 1300 = 69$.

	99
9	$\overline{9999}$
	- 81
189	$\overline{1899}$
	- 1701
	198
	36
3	$\overline{1300}$
	- 9
66	400
	- 396
	4