

**ASSIGNMENT    REAL NUMBERS    CLASS X**

1. Using Euclid's division algorithm, find the HCF of:  
(i) 210 and 55      (ii) 117 and 65      (iii) 240 and 1024      (iv) 391 and 425  
(v) 1288 and 575      (vi) 155 and 1385      (vii) 300, 540, 890
2. A merchant has 105 litres of oil of one kind, 140 litres of second kind and 175 litres of third kind. He wants to sell the oil by filling the three kinds of oil in tins of equal capacity. What should be the greatest capacity of such tin?
3. Show that one and only one out of  $n, n+2$  or  $n+4$  is divisible by 3, where  $n$  is any positive integer.
4. Express each of the following integers as the product of its prime factors:  
(i) 60      (ii) 1386      (iii) 6435      (iv) 2184      (v) 8085      (vi) 14850
5. Find LCM and HCF of the following pairs of integers and verify that  $\text{LCM} \times \text{HCF} = \text{Product of integers}$ :  
(i) 63 and 168      (ii) 144 and 160      (iii) 510 and 92      (iv) 252 and 488
6. Find LCM and HCF of the following pairs of integers by applying prime factorization method:  
(i) 12, 15 and 21      (ii) 15, 24 and 36      (iii) 225, 336 and 360      (iv) 240, 1024 and 1536
7. The HCF and LCM of two numbers are 145 and 2175 respectively. If one of these numbers is 725, find the other number.
8. The product of two numbers is 20736 and their HCF is 54. Find their LCM.
9. The LCM of two numbers is 192 and their product is 3072. Find their HCF.
10. Show that the following numbers are irrational:  
(i)  $\sqrt{5}$       (ii)  $2+\sqrt{3}$       (iii)  $4-\sqrt{5}$       (iv)  $3\sqrt{5}$       (v)  $\sqrt{2}+\sqrt{3}$   
(vi)  $2+3\sqrt{5}$       (vii)  $3-5\sqrt{2}$       (viii)  $\frac{1}{\sqrt{2}}$
11. Without actually performing the long division, state whether the following rational number will have terminating decimal expansion or a non-terminating repeating decimal expansion:  
(i)  $\frac{13}{121}$       (ii)  $\frac{57}{128}$       (iii)  $\frac{19}{45}$       (iv)  $\frac{108}{250}$       (v)  $\frac{113}{175}$       (vi)  $\frac{517}{2000}$
12. Write down the decimal expansions of the following rational numbers by writing their denominators in the form  $2^m \times 5^n$  where  $m, n$  are non-negative integers.  
(i)  $\frac{5}{8}$       (ii)  $\frac{17}{125}$       (iii)  $\frac{13}{80}$       (iv)  $\frac{123}{625}$       (v)  $\frac{7014}{400}$       (vi)  $\frac{17}{2000}$
13. The decimal expansion of the number  $\frac{43}{2^4 \cdot 5^3}$ , will terminate after how many places of decimals?

**ANSWERS**

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|--|---|--|--|--|---------------|----------|
| 1. (i) 5   | (ii) 13   | (iii) 16                               | (iv) 17                                  | (v) 23                                 | (vi) 5        | (vii) 10 |
| 2. 35  | 4. (i) $2^2 \times 3 \times 5$                      | (ii) $2 \times 3^2 \times 7 \times 11$ | (iii) $3^2 \times 5 \times 11 \times 13$ | (iv) $2^3 \times 3 \times 7 \times 13$ |               |          |
| (v) $3 \times 5 \times 7^2 \times 11$                  | (vi) $2 \times 3^3 \times 5^2 \times 11$            | 5. (i) 504, 21                         | (ii) 1440, 16                            | (iii) 23460, 2                         | (iv) 30744, 4 |          |
| 6. (i) 420, 3  | (ii) 360, 3   | (iii) 25200, 3                         | (iv) 15260, 16                           | 7. 435                                 | 8. 384        | 9. 16    |
| 11. (i), (iii), (v) have non-terminating repeating and | (ii), (iv), (vi) have terminating decimal expansion |  |  |  |               |          |
| 12. (i) 0.625  | (ii) 0.136  | (iii) 0.1625                           | (iv) 0.1968                              | (v) 17.535                             | (vi) 0.0085   |          |
| 13. Four Places  |   |  |  |  |               |          |