1- The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

- **A.**123
- **B.**127
- **C.**235
- **D.**305
- **E.**None of these

Answer & Explanation

Answer - **B** (127)

Explanation - Required number = H.C.F. of (1657 - 6) and (2037 - 5)

= H.C.F. of 1651 and 2032 = 127.

2- Which of the following has the most number of divisors?

- **A.**99
- **B.**101
- **C.**176
- **D.**182
- **E.**None of these

Answer & Explanation

Answer - **C** (176)

Explanation - 99 = 1 x 3 x 3 x 11

101 = 1 x 101

176 = 1 x 2 x 2 x 2 x 2 x 11

182 = 1 x 2 x 7 x 13

So, divisors of 99 are 1, 3, 9, 11, 33, .99

Divisors of 101 are 1 and 101

Divisors of 176 are 1, 2, 4, 8, 11, 16, 22, 44, 88 and 176

Divisors of 182 are 1, 2, 7, 13, 14, 26, 91 and 182.

Hence, 176 has the most number of divisors.

3- The L.C.M. of two numbers is 48. The numbers are in the ratio 2 : 3. Then sum of the number is:

- **A.**28
- **B.**32
- **C.**40
- **D.**64
- **E.**None of these

Answer & Explanation

Answer - **C** (40)

Explanation - Let the numbers be 2*x* and 3*x*.

Then, their L.C.M. = 6*x*.

So, 6*x* = 48 or *x* = 8.

The numbers are 16 and 24.

Hence, required sum = (16 + 24) = 40.

4- If the sum of two numbers is 55 and the H.C.F. and L.C.M. of these numbers are 5 and 120 respectively, then the sum of the reciprocals of the numbers is equal to:

- **A.**55/601
- **B.**601/55
- **C.**11/120
- **D.**120/11
- **E.**None of these

Answer & Explanation

Answer - **C** (11/120)

Explanation - Let the numbers be *a* and *b*.

Then, *a* + *b* = 55 and *ab* = 5 x 120 = 600.

$$\text{The required sum} = \frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} = \frac{55}{600} = \frac{11}{120}$$

5- The greatest possible length which can be used to measure exactly the lengths 7 m, 3 m 85 cm, 12 m 95 cm is:

- **A.**15 cm
- **B.**25 cm
- **C.**35 cm
- **D.**42 cm
- **E.**None of these

Answer & Explanation

Answer - **C** (35 cm)

Explanation - Required length = H.C.F. of 700 cm, 385 cm and 1295 cm = 35 cm.

6- Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of the three numbers is:

- **A.**75
- **B.**81
- **C.**85
- **D.**89
- **E.**None of these

Answer & Explanation

Answer - **C** (85)

Explanation - Since the numbers are co-prime, they contain only 1 as the common factor.

Also, the given two products have the middle number in common.

So, middle number = H.C.F. of 551 and 1073 = 29;

$$\text{First number} = \frac{551}{29} = 19; \quad \text{Third number} = \frac{1073}{29} = 37.$$

Required sum = (19 + 29 + 37) = 85.

7- Find the highest common factor of 36 and 84?

- **A.**4
- **B.**6
- **C.**12

- **D.**18
- **E.**None of these

Answer & Explanation

Answer - **C** (12)

Explanation - $36 = 2^2 \times 3^2$

$84 = 2^2 \times 3 \times 7$

H.C.F. $= 2^2 \times 3 = 12$.

8- Which of the following fraction is the largest?

- **A.**7/8
- **B.**13/16
- **C.**31/40
- **D.**63/80
- **E.**None of these

Answer & Explanation

Answer - **A** (7/8)

Explanation - L.C.M. of 8, 16, 40 and 80 = 80.

$\frac{7}{8} = \frac{70}{80}$; $\frac{13}{16} = \frac{65}{80}$; $\frac{31}{40} = \frac{62}{80}$

Since, $\frac{70}{80} > \frac{65}{80} > \frac{63}{80} > \frac{62}{80}$, so $\frac{7}{8} > \frac{13}{16} > \frac{63}{80} > \frac{31}{40}$

So, $\frac{7}{8}$ is the largest.

9- The least number, which when divided by 12, 15, 20 and 54 leaves in each case a remainder of 8 is:

- **A.**504
- **B.**536
- **C.**544
- **D.**548

- **E.**None of these

Answer & Explanation

Answer - **D** (548)

Explanation - Required number = (L.C.M. of 12, 15, 20, 54) + 8

= 540 + 8

= 548.

10- The product of two numbers is 4107. If the H.C.F. of these numbers is 37, then the greater number is:

- **A.**101
- **B.**107
- **C.**111
- **D.**185
- **E.**None of these

Answer & Explanation

Answer - **C** (111)

Explanation - Let the numbers be 37*a* and 37*b*.

Then, 37*a* x 37*b* = 4107

ab = 3.

Now, co-primes with product 3 are (1, 3).

So, the required numbers are (37 x 1, 37 x 3) *i.e.,* (37, 111).

Greater number = 111.