



## **HCF and LCM Questions for SSC CGL PDF**

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### Instructions

For the following questions answer them individually

#### Question 1

The H.C.F. and L.C.M. of, two numbers are 8 and 48 respectively. If one of the numbers is 24, then the other number is

- A 48
- B 36
- C 24
- D 16

Answer: D

#### Explanation:

Given:-

Numbers- First = 24

Second = x (suppose)

H.C.F. of numbers = 8

L.C.M. of numbers = 48

As we know:

H.C.F.\* L.C.M. = Product of numbers

Hence

$$48*8 = 24*x$$

$$x = 16$$

#### Question 2

Two numbers are in the ratio 3:4. Their L.C.M. is 84. The greater number is

- A 21
- B 24
- C 28
- D 84

Answer: C

#### Explanation:

Let the numbers be 3x, 4x

LCM of 3x and 4x is = 12x

So the number 84 is divisible by 12

$$\frac{84}{12} = 7$$

The numbers are  $7 \times 3 = 21$ ,  $7 \times 4 = 28$

The greatest number is 28

#### Question 3

The sum of two numbers is 36 and their H.C.F and L.C.M. are 3 and 105 respectively. The sum of the reciprocals of two numbers is

- A  $\frac{2}{35}$
- B  $\frac{3}{25}$
- C  $\frac{4}{35}$

D 2/25

**Answer: C**

**Explanation:**

let's say numbers are  $x$  and  $y$

hence sum of the reciprocals will be  $\frac{1}{x} + \frac{1}{y}$

or  $\frac{x+y}{xy}$

as  $x + y = 36$  (given)

and  $xy = HCF \times LCM$   
 $= 3 \times 105 = 315$

after putting the values we will get summation of reciprocals equals to  $\frac{4}{35}$

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**Question 4**

**L.C.M. of two numbers is 120 and their H.C.F. is 10. Which of the following can be the sum of those two numbers?**

- A 140
- B 80
- C 60
- D 70

**Answer: D**

**Explanation:**

We assume that numbers are  $hr_1$  and  $hr_2$  (where  $h =$  H.C.F. of numbers and  $r_1$  and  $r_2$  are prime factors)

So L.C.M. will be  $= hr_1r_2 = 120$

or  $r_1r_2 = 12$

So  $r_1 = 4$  and  $r_2 = 3$  ; numbers will be 40 and 30, sum is 70

or  $r_1 = 12$  and  $r_2 = 1$  ; numbers will be 120 and 10, sum is 130

Hence only option D justifies.

**Question 5**

**Product of two coprime numbers is 117. Then their LCM is**

- A 9
- B 13
- C 39
- D 117

**Answer: D**

**Explanation:**

Let the two numbers be  $a, b$ .

Hence  $a * b = L.C.M(a,b) * G.C.D(a,b)$

It is given that  $a, b$  are co-primes, implies  $G.C.D(a,b) = 1$

Hence from the above equation we get  $L.C.M(a,b) = a*b = 117$

**Question 6**

**HCF and LCM of two numbers are 11 and 825 respectively. If one number is 275 find the other number.**

- A 53
- B 45
- C 33
- D 43

**Answer:** C

**Explanation:**

Let the number =  $x$

HCF = 11 and LCM = 825

Product of HCF and LCM = Product of the two numbers

$$\Rightarrow x \times 275 = 11 \times 825$$

$$\Rightarrow x = \frac{11 \times 825}{275}$$

$$\Rightarrow x = \frac{825}{25} = 33$$

$\Rightarrow$  Ans - (C)

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### Question 7

What is the LCM (least common multiple) of 57 and 93?

- A 1767
- B 1567
- C 1576
- D 1919

**Answer:** A

**Explanation:**

Prime factorization of 57 =  $3 \times 19$

Prime factorization of 93 =  $3 \times 31$

$\Rightarrow$  L.C.M. of 57 and 93 =  $3 \times 19 \times 31$

$$= 57 \times 31 = 1767$$

$\Rightarrow$  Ans - (A)

### Question 8

What is the HCF (highest common factor) of 57 and 513?

- A 10
- B 57
- C 3
- D 27

**Answer:** B

**Explanation:**

Factors of 57 = 1, 3, 19, 57

Factors of 513 = 1, 3, 9, 19, 27, 57, 171, 513

The common factors are = 1, 3, 19, 57

=> Highest common factor = 57

=> Ans - (B)

**Question 9**

The two numbers are 63 and 77, HCF is 7, Find the LCM.

A 668

B 693

C 674

D 680

**Answer:** B

**Explanation:**

H.C.F. (a,b)  $\times$  L.C.M. (a,b) =  $a \times b$

The numbers a = 63 and b = 77 and HCF = 7

=> L.C.M. =  $\frac{a \times b}{HCF}$

=  $\frac{63 \times 77}{7} = 63 \times 11$

= 693

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**Question 10**

What is the HCF (highest common factor) of 77 and 275?

A 12

B 11

C 7

D 25

**Answer:** B

**Explanation:**

Factors of : 77 = 1, 7, 11, 77

275 = 1, 5, 11, 25, 55, 275

The common factors are 1 and 11

and HCF = 11

=> Ans - (B)

**Question 11**

The two numbers are 55 and 99, HCF is 11, What is their LCM?

A 486

- B 479
- C 476
- D 495

**Answer:** D

**Explanation:**

Let the LCM =  $x$

Numbers are = 55 , 99

Also, product of numbers = HCF  $\times$  LCM

$$\Rightarrow 55 \times 99 = 11 \times x$$

$$\Rightarrow x = \frac{55 \times 99}{11} = 5 \times 99$$

$$\Rightarrow x = 495$$

$\Rightarrow$  Ans - (D)

**Question 12**

**What is the HCF (highest common factor) of 133 and 112?**

- A 15
- B 7
- C 19
- D 16

**Answer:** B

**Explanation:**

Prime factorization of

$$133 = 7 \times 19$$

$$112 = 2^4 \times 7$$

There is only 1 common factor, and thus the HCF (highest common factor) = 7

$\Rightarrow$  Ans - (B)

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**Question 13**

**Find the HCF of  $\frac{2}{3}, \frac{1}{2}, \frac{3}{5}$**

- A 6
- B  $\frac{1}{30}$
- C  $\frac{1}{15}$
- D  $\frac{1}{10}$

**Answer:** B

**Explanation:**

HCF = HCF of numerators/ LCM of denominators

HCF of 1, 2, 3 = 1

LCM of 3, 2, 5 = 30

Hence,  $\frac{1}{30}$

**Question 14**

**What is the LCM of 64 and 56?**

- A 448
- B 488
- C 484
- D 408

**Answer:** A

**Explanation:**

(diagram)

so LCM of 64 & 56 is =  $8 \times 8 \times 7 = 448$

So the answer is option A.

**Question 15**

**What is the HCF of  $\frac{7}{9}$ ,  $\frac{2}{3}$ ,  $\frac{5}{8}$  and  $\frac{7}{12}$ ?**

- A  $\frac{1}{18}$
- B  $\frac{1}{36}$
- C  $\frac{1}{144}$
- D  $\frac{1}{72}$

**Answer:** D

**Explanation:**

HCF of fractions = (HCF of the numerators) / (LCM of the denominators).

HCF of 7, 2, 5 and 7 is 1.

LCM of 9, 3, 8 and 12 is 72.

Therefore, the HCF of the given fractions is  $\frac{1}{72}$ .

Option D is the right answer.

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**Question 16**

**The LCM of two numbers is 4 times their HCF. The sum of LCM and HCF is 125. If one of the numbers is 100, then the other number is**

- A 5
- B 25
- C 100
- D 125

**Answer:** B

**Explanation:**

Let one of the numbers =  $x$  and other number = 100

Let L.C.M =  $L$  and H.C.F =  $H$

According to ques,  $\Rightarrow L = 4H$  -----(i)

and  $L + H = 125$

Substituting value from equation (i), we get :  $4H + H = 5H = 125$

$$\Rightarrow H = \frac{125}{5} = 25$$

$$\Rightarrow L = 4 \times 25 = 100$$

Thus, product of numbers =  $L \times H$

$$\Rightarrow 100 \times x = 100 \times 25$$

$$\Rightarrow x = 25$$

$\Rightarrow$  Ans - (B)

**Question 17**

**Find the HCF of  $\frac{2}{3}$  ,  $\frac{6}{8}$ ,  $\frac{7}{12}$  and  $\frac{2}{5}$**

**A**  $\frac{1}{120}$

**B**  $\frac{1}{60}$

**C**  $\frac{1}{30}$

**D**  $\frac{1}{240}$

**Answer:** B

**Explanation:**

HCF of fractions = HCF of the numerators / LCM of the denominators.  
All the fractions must be in their empirical form to apply this formula.

$\frac{6}{8}$  can be written as  $\frac{3}{4}$ .

The given fractions are  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{7}{12}$  and  $\frac{2}{5}$ .

HCF of the numerators = 1.

LCM of (3,4,12 and 5) is 60.

Therefore, the HCF of the given fractions is  $\frac{1}{60}$ .

Hence, option B is the right answer.

**Question 18**

**Find the HCF of  $\frac{8}{3}$ ,  $\frac{12}{7}$  and  $\frac{13}{12}$ .**

**A**  $\frac{1}{504}$

**B**  $\frac{1}{126}$

**C**  $\frac{1}{84}$

**D**  $\frac{1}{1008}$

**Answer:** C

**Explanation:**

HCF of fractions = HCF of the numerators / LCM of the denominators.  
All the fractions must be in their empirical form to apply this formula.

HCF of the numerators (8,12,13) is 1.



LCM of the denominators (3,7,12) is 84.

Therefore, the HCF of the given fractions is  $1/84$ . Hence, option C is the right answer.

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### Question 19

Find the LCM of  $3/4$ ,  $5/8$  and  $9/27$ .

- A 15
- B 45
- C  $1/24$
- D  $1/48$

**Answer:** A

#### Explanation:

LCM of fractions = LCM of the numerators / HCF of the denominators.

All the fractions must be in their empirical form to apply this formula.

$9/27$  can be reduced to  $1/3$ .

Therefore, the given fractions are  $3/4$ ,  $5/8$  and  $1/3$ .

LCM of the numerators (3,5,1) is 15.

HCF of the denominators (4,8,3) is 1.

Therefore, the LCM is  $15/1 = 15$ .

Hence, option A is the right answer.

### Question 20

Find the HCF of 0.8, 0.125, 0.625 and 0.5.

- A 0.1
- B  $1/40$
- C  $1/20$
- D  $1/80$

**Answer:** B

#### Explanation:

HCF of fractions = HCF of the numerators / LCM of the denominators.  
All the fractions must be in their empirical form to apply this formula.

$$0.8 = 4/5$$

$$0.125 = 1/8$$

$$0.625 = 5/8$$

$$0.5 = 1/2$$

The given numbers can be written as  $4/5$ ,  $1/8$ ,  $5/8$ ,  $1/2$ .

HCF of the numerators = 1.

LCM of the denominators (5,8,2) = 40.

Therefore, the HCF of the given numbers will be  $1/40$  or 0.025.

Therefore, option B is the right answer.

### Question 21

Find the HCF of  $3/8$ ,  $17/19$  and  $21/23$ .

- A  $1/2392$

- B 1/3192
- C 1/3128
- D 1/3496

**Answer:** D

**Explanation:**

HCF of fractions = HCF of the numerators / LCM of the denominators.  
All the fractions must be in their empirical form to apply this formula.

The HCF of (3,17,21) is 1.

The LCM of (8,19,23) is 3496.

Therefore, the HCF of the given fractions is 1/3496.

Hence, option D is the right answer.

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**Question 22**

The sum of two numbers is 7 and the sum their squares is 23, their product is equal to:

- A 10
- B 11
- C 12
- D 13

**Answer:** D

**Explanation:**

Let the numbers be  $x$  and  $y$

It is given that  $x^2 + y^2 = 23$  -----(i)

Also,  $x + y = 7$

Squaring both sides, we get :

$$\Rightarrow x^2 + y^2 + 2xy = 49$$

$$\Rightarrow 23 + 2xy = 49$$

$$\Rightarrow 2xy = 49 - 23 = 26$$

$$\Rightarrow xy = \frac{26}{2} = 13$$

∴ Product of the numbers = **13**

⇒ Ans - (D)

**Question 23**

The difference between two numbers is 1146. When we divide the larger number by smaller we get 4 as quotient and 6 as remainder. Find the larger number.

- A 1526
- B 1431
- C 1485
- D 1234

**Answer:** A

**Explanation:**

Let the smaller number be  $x$  and the larger number =  $(x + 1146)$

According to ques, on dividing the larger term by smaller one,

$$\Rightarrow (x + 1146) = 4x + 6$$

$$\Rightarrow 4x - x = 1146 - 6$$

$$\Rightarrow 3x = 1140$$

$$\Rightarrow x = \frac{1140}{3} = 380$$

$$\therefore \text{Larger number} = 380 + 1146 = 1526$$

$\Rightarrow$  Ans - (A)

**Question 24**

The number between 4000 and 5000 that is divisible by each of 12, 18, 21 and 32 is

**A** 4302

**B** 4032

**C** 4023

**D** 4203

**Answer:** B

**Explanation:**

LCM of 12,18,21,32 is 252

Multiples of 252 between 4000 and 5000 are 4032, 4284, 4536, 4788.

4032 is present in the options.

Hence, option B is the correct answer.

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**Question 25**

A number between 1000 and 2000 which when divided by 30, 36 & 80 gives a remainder 11 in each case is

**A** 1451

**B** 1641

**C** 1712

**D** 1523

**Answer:** A

**Explanation:**

LCM of given 3 numbers (30, 36, 80) = 720

Multiple of 720 between 1000 and 2000 is 1440.

$\therefore$  Number which gives a remainder 11 in each case  $(1440 + 11) = 1451$

Hence, option A is the correct answer.

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