

MATHS

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PLAYING WITH NUMBERS

Solution Of Textual Questions Page 47

1. Try arranging 18 marbles in rows and find the

factors of 18

1 marble in each row.



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2. Try arranging 18 marbles in rows and find the factors of 18

2 marbles in each row.



3. Try arranging 18 marbles in rows anil find the factors of 18

3 marbles in each row



4. Try arranging 18 marbles in rows anil find the factors of 18

6 marbles in each row.



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Solution Of Textual Questions Page 51

1. Is 15 a composite number? Why? What about 18? 25?



Try These

1. Observe that $2 \times 3 + 1 = 7$ is a prime number. Here 1 has been added to a multiple of 2 to get a prime number. Can you find some other numbers of this type.



- **2.** Find the common factor of:
- 8, 20



3. Find the common factor of: 9,15



4. convert the next ratio to hundred 7 /16?



5. Write the prime factorization of 16, 28,38



6. Find H.C.F of :

24 and 36



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7. Find H.C.F of :

15,25 and 30.



8. Find H.C.F of:

8 and 12



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9. Find H.C.F of :

12,16 and 28.



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Exercise 31

1. Write all the factors of the following number:



2. Write all the factors of the following number:

15



3. Write all the factors of the following number:



4. Write all the factors of the following number:

27



5. Write all the factors of the following number :

12



6. Write all the factors of the following number:



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7. Write all the factors of the following number:

18



8. Write all the factors of the following number:



9. Write first five multiples of :

5



10. Write first five multiples of :

8



11. Match the items in column 1 with the items in column 2:

Column 1	Column 2
(i) 35	(a) Multiple of 8
(ii) 15	(b) Multiple of 7
(iii)16	(c) Multiple of 70
(iv) 20	(d) Factor of 30
(v) 25	(e) Factor of 50
	(f) Factor of 20



1. What is the sum of any two Odd numbers ,Even numbers?



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2. What is the sum of any two

Even numbers



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3. State whether the followin statements are True of False:

the sum of three odd numbers is even.



4. State whether the following statements are True of False:

The sum of two odd numbers and one even



5. State whether the followin statements are True of False:

The product of three odd numbers is odd.



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6. State whether the followin statements are True of False:

If an even number is divided by 2,the quotient is always odd.



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7.

State whether the following statements are True

or False:

All prime numbers are odd.



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8. State whether the followin statements are True of False:

Prime numbers do not have any factors.



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9. State whether the following statements are True or False:

Sum of two prime numbers is always even.



10. State whether the followin statements are True of False:

2 is the only even prime number.



11. State whether the following statements are

True of False:

All even numbers are composite numbers.



12. State whether the followin statements are True of False:

The product of two even numbers is always even.



13. The numbers 13 and 31 are prime numbers.Both these numbers have same digits1 and 3.Find such pairs of prime numbers upto 100.



14. Write down separately the prime and composite numbers less than 20.



15. What is the greatest prime number between 1 and 10?



16. Express the following as the sum of two odd primes:

44



17. Express the following as the sum of two odd primes:

24



18. Express the following as the sum of two odd primes:

24



19. Express the following as the sum of two odd primes:

18



20. Give three pairs of prime numbers whose diffrene is 2.[Remark:Two prime numbers whose difference is 2 are called twin primes]



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21. Which of the following numbers are prime?

(a) 23, (b) 51,(c) 37, (d) 26



22. Write seven consecutive composite numbers less than 100 so that there is no prime number between them.



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23. Express each of the following numbers as the sum of three odd primes:

21



24. Express each of the following numbers as the sum of three odd primes:

31



25. Express each of the following numbers as the sum of three odd primes:

53



26. Express each of the following numbers as the sum of three odd primes:

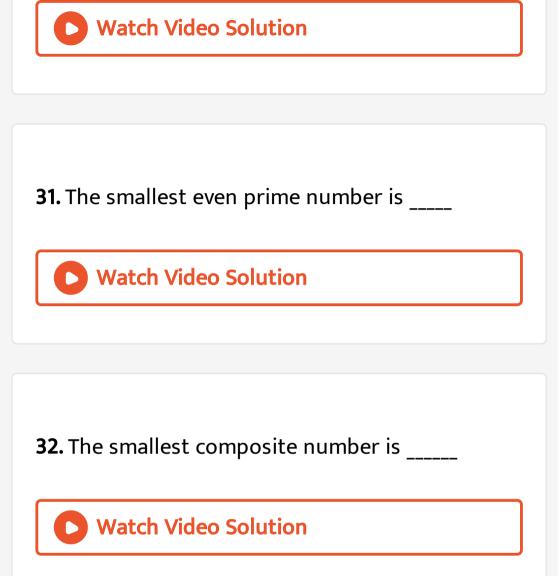
61



27. Write five pairs of prime numbers below 20 whose sum is divisible by 5. (Hint 3 + 7 = 10)



28. Fill in the blanks in the following:	
A number which has only two factors is called a	
······································	
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29. A number which has more than two factors iscalled a number.	
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30. 1 is neither prime nor	



33. Fill in the blanks in the following:

the smallest even number is



Exercise 3 3

1. Using divisibility tests, determine which of the following numbers are divisible by 2, by 3, by 4, by

5, by 6, by 8, by 9, by 10, by 11 (say, yes or no).

Number = 128,990,1586,275,6686,639210,429714,2856,3060,406839



2. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8: 572



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3. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.

726352



4. Using divisibility tests, determine which of the following numbers are divisible by 4. 5500



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5. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8: 6000



6. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8: 12159



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7. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8: 14560

8. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.

Divisbility by 4

21084



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9. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.

Divisbility by 4

31795072



10. Using divisibility tests, determine which of the following numbers are divisible by 4, by 8:



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11. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8:



12. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8:



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13. Using divisibility tests, determine which of the following numbers are divisible by 4,by 8:

726352



14. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.



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15. Using divisibility tests, determine which of the following numbers are divisible by 8 6000



16. Using divisibility tests, determine which of the following numbers are divisible by 8. 12159



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17. Using divisibility tests, determine which of the following numbers are divisible by 8.

14560



18. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.

Divisbility by 4

21084



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19. Using divisibility tests, determine which of the following numbers are divisible by 4 by 8.

Divisbility by 4

31795072



20. Using divisibility tests, determine which of the following numbers are divisible by 8.

2150



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21. Using divisibility tests, determine which of the following numbers are divisible by 8.

1701



22. Using divisibility tests determine which of following numbers are divisible by 6:



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23. Using divisibility tests, determine which of the following numbers are divisible by 6.

1258



24. Using divisibility tests, determine which of the following numbers are divisible by 6. 3230



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25. Using divisibility tests, determine which of the following numbers are divisible by 6.

366



26. Using divisibility tests, determine which of the following numbers are divisible by 6. 901352



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27. Using divisibility tests, determine which of the following numbers are divisible by 6.

438750



28. Using divisibility tests, determine which of the following numbers are divisible by 6.



29. Using divisibility tests determine which of following numbers are divisible by 6:

12583



30. Using divisibility tests determine which of following numbers are divisible by 6: 639210



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31. Using divisibility tests determine which of following numbers are divisible by 6:

17852



32. Using divisibility tests, determine which of the following numbers are divisible by 11. 901153



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33. Write the smallest digit and the largest digit in the blank space of each of the following numbers so that the number isdivisible by 3: 6724.



34. Write the smallest digit and the largest digit in the blank space of each of the following numbers so that the number isdivisible by 3: 4765 2.



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35. Write digit in the blank space of each of the following numbers so that the number is divisible by 11:

8 9484.



36. Write the digit in the blank space of each of the following numbers so that the number formed is divisible by 11

92..... 390



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Exercise 3 4

1. Find the common factors of :

20 and 28.





- **2.** Find the common factors of :
- 15 and 25.



- **3.** Find the common factors of :
- 35 and 50



4. Find the common factors of:



56 and 120.

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- 5. Find the common factors of:
- 4,8 and 12



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6. Find the common factors of:

5,15 and 25.



- 7. Find first three common multiples of:
- 6 and 8.



- 8. Find first three common multiples of
- 3 and 4



9. Write all the numbers less than 100 which are common mutliples of 6 and 8.



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10. Which of the following numbers are co-prime18 and 35



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11. Which of the following numbers are co-prime 15 and 37



12. Which of the following numbers are co-prime 30 and 415



13. Which of the following numbers are co-prime

17 and 68



14. Which of the following numbers are co-prime 216, 215



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15. Which of the following numbers are co-prime 81 and 16



16. A number is divisible by both 5 and 12.By which other number will that number be always divisible?



17. A number is divisible by 12.By what other numbers will that number divisible?



Exercise 3 5

Which of the following statemennts are true?
 If a number is divisible by 3,it must be divisible by



2. Which of the following statemennts jare true?

If a number is divisible by 9,it must be divisible by

3.



3. Check whether the given statement is true or not

A number is divisible by 18 if it is divisible by both 3 and 6.



4. Which of the following statemennts are true?

A number is divisible by 9 and 10 both, then it must be divisible by 90.



5. Which of the following statemennts are true?

If two numbers are co-primes, at least one of them

must be prime.



6. Which of the following statemennts jare true?

All numbers which are divisible by 4 must also be divisble by 8.



7. Which of the following statemennts are true?

All numbers which are divisible by 8 must also be divisible by 4.



8. Which of the following statemennts jare true?

If a number exactly divides two numbers separately,it must exactly divide their sum.



9. Which of the following statemennts jare true?

If a number exactly divides the sum of two numbers, it must exactly divide the two numbers separately.



10. Here are two different factor trees for 60.Write the missing numbers.



11. Which factors are not included in the prime factorisation of a composite number?



12. Write the greatest four digit number and express it in terms of its prime factors.



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13. Write the smallest five digit number and exress it in the form of its prime factors.



14. Find all the prime factors of 1729 and arrange them in ascending order. Now state the relation, if

nay, between two consecutive prime factors.



15. The product of three consecutive numbers is always divisible by 6.Explain this statement with the help of some examples.



16. The sum of two consecutive odd number is divisible by 4. Verify statement with help of some examples.

17. In which of the following expressions, prime factorization has been done?

$$18 = 2 \times 6 \times 1$$



18. In which of the following expressions,prime factorisation has been done:

$$56 = 1 \times 7 \times 2 \times 2 \times 2$$
.



19. In which of the following expressions,prime factorisation has been done:

$$70 = 2 \times 5 \times 7.$$



20. In which of the following expressions, prime factorisation has been done:

$$54 = 2 \times 3 \times 9.$$



21. Determine if 25110 is divisible by 45.[Hint:5 and 9 are co-oprime numbers.Test the divisibility of the numbers by 5 and 9.].



22. 18 is divisible by both 2 and 3 .It is also divisible by 2 xx 3 = 6.Similarly, a number is divisible by both 4 and 6.Can we say tyhat number must also be divisible by 4 xx 6 = 24?If not,give one example to justify yur answer.



23. I am the smallest number ,having four different prime factors.Can you find me?



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Exercise 3 6

1. Find the HCF of

18,48



2. Find the HCF of

30,42



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3. Find the HCF of

18,60



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4. Find the HCF of

27,63



- **5.** Find the HCF of
- 36,84



- **6.** Find the HCF of
- 34,102



7. Find the HCF of

20,40,100



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8. Find the HCF of

91,112,49



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9. Find the HCF of

18,54,81



10. Find the HCF of

12,45,75



11. What is the H.C.F of two consecutive numbers?



12. What is the H.C.F of two consecutive even numbers?



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13. What is the H.C.F of two consecutive odd numbers?



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14. H.C.F. of co-prime numbers 4 and 15 was found

as follows:factorisation :4=2 imes 2 and

 $15=3\times5.$ since there is no common prime factor,so H.C.F. of 4 anb 15 is 0.ls the answer correct?If not,what is the correct H.C.F ?



Exercise 3 7

1. Anil purchases two hags of fertilizer of weights 20 kg and 55kg. Find the maximum value of weight which can measure the weight of fertilizer exact number of times.



2. Three boys step off together from the same spot. Their steps measure 15 cm,25 cm and 45 cm respectively. What is the minimum distance each should cover so that all can cover the distance in complete steps?



3. Thge length ,breadth and height of a room are 825 cm ,675 cm and 450 cm respectively.Find the

longest tape which can measure the three dimensions of the room exactly.



4. Determine the smallest 3-digit number which is exactly divisible by 6,8,12.



5. Determine the largest 3-digit number exactly divisible by 8,10 and 12.



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6. The Traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively, If they change simultaneously at 7 am at what time will they change simultaneously again?



7. Three tankers contain 403 litres,434 litres and 465 litres of diesel repectively. Find the maximum capacity of a container that can measure the

diesel of the three containers exact number of times.



15 and 18 leave remainder 5 in each case.

8. Find the least number which when divided by 6,



9. Find the smallest four digit number which is divisible by 18,24 and 32.



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10. Find the LCM of the following numbers.

(a) 9,4



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11. Find the LCM of the following numbers in which one number is the factor of the other:

6,36



Additional Questions For Practice Very Short Type Questions

_		_		•		•
1.	Number	ΩŤ	even	prime	number	ıs
••	Hamber	O .	CVCII	P1 1111C	Hallibei	

A. 0

B. 1

C. infinite

D. none of these

Answer:



2. The HCF of two consecutive odd numbers is
A. 0
B. 1
C. 2
D. none of these
Answer:
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3. Two numbers are said to be co-prime if

B. One is prime				
C. No common factor other than 1				
D. none of these				
Answer:				
Watch Video Solution				
4. HCF of 100 and 101 is				
A. 100				

A. Both are prime

- B. 101
- C. 1
- D. none of these

Answer:



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5. LCM of 999 and 1000 is

- A. 999
- B. 1000

C. 999000

D. none of these

Answer:



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6. Greatest 2-digit prime number is:

A. 11

B. 97

C. 13

D. none of these

Answer:



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7. Smallest odd composite number

A. 9

B. 4

C. 2

D. none of these

Answer: Watch Video Solution

8. Which of the following is a factor of every number

A. 1

B. 0

C. any number

D. none of these

Answer:

9. Identify twin primes

A. 13,17

B. 23,29

C. 7,5

D. none of these

Answer:



10. For any two numbers which is greater:			
A. HCF			
B. LCM			
C. none			
D. none of these			
Answer:			
Watch Video Solution			

11. State whether the statement is true or not

Sum of 2 prime numbers is always a prime number.



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12. Check whether the statement is true or not Prime number are not divisible by any number.



13. Which of the following statemennts are true? If a number is divisible by 3, it must be divisible by 9.



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14. Check whether the statement is true or not If a number is divided by its factor, Remainder is always zero.



15. Check the statement is true or not Number 1is the multiple of every number.



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16. Check whether the statement is true or not Sum of two odd numbers is divisible by 2.



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17. Check whether the statement is true or not

Every number other than 1 has atleast two

distinct factors **Watch Video Solution** 18. Fill in the blanks: The number which is neither prime nor composite is **Watch Video Solution 19.** The smallest perfect number is **Watch Video Solution**

20. A number which has more than two factors is ____called a number.



21. L.C.M. of 4,5,2 is



22. The process of getting all the prime factors of a number is called



23. Smallest number having three different prime factors is



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24. Two prime numbers whose difference is 2 are called



Additional Questions For Practice Short Type **Questions**

1. Find:

HCF of 2 and an even number



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2. Find:

HCF of two distinct prime numbers.



3. Express the following as the sum of three odd primes

49



4. Express the following as the sum of three odd primes

27

5. Express the following as the sum of three odd primes

105



6. Express the following as the sum of three odd primes

31



7. A list consists of the following pairs of numbers. (41,43), (45,47), (49,51), (53,55), (57,59) Classify them as pairs of:

(a) co-primes (b) primes (c) composite (d) Twin primes



Additional Questions For Practice Long Answer Type Questions

1. In each of the following numbers replace by the smallest digits to make.

46 * 53 divisible by 3.



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2. In each of the following numbers replace x by the smallest digits to make.

871x must be divisible by 4.



3. In each of the following numbers replace by the smallest digits to make.

7*9089 must be divisible by 11.



4. In each of the following numbers replace by the smallest digits to make.

574 imes must be divisible by 5.



5. Write five consecutive composite numbers so that there is no prime number between them.



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6. Can you find a natural number which is divisible by both 2 and 10 but not by 5. Give reason.



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7. Find the HCF of:

72,180



- 8. Find the HCF of:
- 64,216,360
 - Watch Video Solution

- 9. Find the HCF of:
- 42,66,102
 - Watch Video Solution

10. Find the LCM of the following numbers.

135,315



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11. Find the LCM of the following numbers.

12,48,64



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12. Find the LCM of the following numbers.

1,3,6,9,12



13. Two bags contain 85 kg and 68 kg of wheat resp. Find the maximum weight of containers which can measure the wheat in either bags in exact number of times.



14. HCF of two number is 15 and their product is 7500. Find their LCM.



15. The students in a class can be divided into groups of 2,3,4,5. What is the least number of children this class can have?



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16. There are 30 mango bites 24 coffee bites 48 eclairs in a box. These are to be put in packets so that each packet contains same number of toffees. Find the maximum number of toffees in each packet.



Additional Questions For Practice Hots High Order Thinking Skills

1. Four bells toll at intervals of 8,9,12 and 15 minutes respectively. If they toll together at 1.00 PM. When will they toll together next?



Sample Paper For Practice

A. Factors
B. multiples
C. perfect numbers
D. None
Answer: A
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2. The smallest perfect number is

1. Every counting number has finite number of

B. 6				
C. 8				
D. none of these				
Answer: B				
Watch Video Solution				
3. Fill in the blanks in the following:				
A number which has only two factors is called a				
••••••••				

A. 4

B. Composite numbers
C. factors
D. none of these
Answer: A
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4. HCF of first ten natural numbers is
A. 5

A. Prime numbers

B. 10

C. 1

D. none of these

Answer: C



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- 5. Give an example of a number which is divisible:
- (a) 2 but not by 4
- (b) 3 not by 9
- (c) 2 and 3 but not by 6

(d) 4 not by 8



6. Express each of the following numbers as two odd primes. (a) 44, (b) 36



7. Find the possible missing twins for the following numbers so that they become twin primes

(a) 29 (b) 19



8. Express the following numbers as the sum of two odd primes: (a) 66, (b) 90



9. Can two numbers have 15 as their HCF and 175 as LCM Why?



10. Fill in the blanks:

Factors which are not included in the prime factorization of a composite number are____ and



11. For a number greater than 10 but less than 20 to be prime, the possible digits in the ones place are , , ,



12. Every number has____number of multiples and____number of factors.



13. Find the numbers between 1 and 20 having exactly three factors



14. What should be added to 5407 to make it divisible by 9.



15. What least number must be subtracted from 2258 to make it divisible by 32



16. Replace the blank space in 526 [] with the least number so that it is divisible by 11



17. Write the number from 10 to 30 and identify.

A pair of twin primes



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18. Write the number from 10 to 30 and identify.

A pair of co-primes



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19. Write the number from 10 to 30 and identify.

A perfect number



20. Write the number from 10 to 30 and identify. composite numbers



21. Write the number from 10 to 30 and identify.

Two prime numbers



22. Write the number from 10 to 30 and identify.

Two odd numbers

