



MATHS

NCERT - NCERT

MATHEMATICS(ENGLISH)

PLAYING WITH NUMBERS

Exercise 3 4

1. Find the common factors of : (a) 20 and 28

(b) 15 and 25

(c) 35 and 50

(d)

56 and 120



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2. Find the common factors of : (a) 4, 8 and 12 (b) 5, 15 and 25



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3.3. Find first three common multiples of :
(a) 6 and 8 (b) 12 and 18



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4. Write all the numbers less than 100 which are common multiples of 3 and 4.



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5. A number is divisible by both 7 and 16. By which other number will that number be always divisible?



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



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7. Which of the following numbers are co-prime?

(a) 18 and 35

(b) 15 and 37

(c) 30 and 415

(d) 17 and 68

(e) 216 and 215

(f) 81 and 16



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Solved Examples

1. Find the common multiples of 3, 4 and 9.



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2. In a morning walk, three persons step off together. Their steps Measure 80 cm, 85 cm and 90 cm respectively. What is the minimum distance each should walk so that all can cover the same distance in complete steps?



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3. Two tankers contain 850 litres and 680 liters of kerosene oil Respectively. Find the maximum capacity of a container which can

measure the kerosene oil of both the tankers when used an exact number of times.



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4. Find the LCM of 20, 25 and 30



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5. Find the least number which when divided by 12, 16, 24 and 36 leaves a remainder 7 in each case.

A. 151

B. 121

C. 141

D. 111

Answer: A



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6. Write all the factors of 68.



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7. Find the factors of 36.



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8. Find the common factors of 75, 60 and 210.



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9. Find the LCM of 12 and 18



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10. Find the LCM of 24 and 90.



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11. Find the LCM of 40, 48 and 45



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12. Write first five multiples of 6.



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13. Write all the prime numbers less than 15.



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Exercise 3 6

1. What is the HCF of two consecutive (a) numbers? (b) even numbers? (c) odd numbers?



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2. 1) what is the HCF of 2 consecutive numbers
(i) numbers (ii) even nos (iii) odd nos
2) HCF of co-prime numbers 4 and 15 was found as follows
by factorisation : and since there is no
common prime factor, so HCF of 4 and 15 is 0.
Is the answer correct? If not, what is the
correct HCF?



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3. Find the HCF of the following numbers :

- (a) 18, 48 (b) 30, 42 (c) 18, 60 (d) 27, 63
(e) 36, 84 (f) 34, 102



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Exercise 3 3

1. Write a digit in the blank space of each of the following numbers so that the number

formed is divisible by 11 : (a) 92_389
(b) 8_9484

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2. 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):

Numbers	Divisible by									
	2	3	4	5	6	8	9	10	11	
128	Yes	No	Yes	No	No	Yes	No	No	No	
990										
1585										
275										
5685										
539210										
429714										
2855										
3050										
406839										

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3. Using divisibility tests, determine which of the following numbers are divisible by 6: (a) 297144 (b) 1258 (c) 4335 (d) 61233 (e) 901352 (f) 438750 (g) 1790184 (h) 12583 (i) 639210 (j) 17852



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4. Using divisibility tests, determine which of the following numbers are divisible by 4; by 8: (a) 572 (b) 726352 (c) 5500 (d)

6000 (e) 12159(f) 14560 (g) 21084

(h) 31795072 (i) 1700 (j) 2150



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5. Write the smallest digit and the greatest digit in the blank space of each of the following numbers so that the number formed is divisible by 3 :(a) (b)



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6. Using divisibility tests, determine which of the following numbers are divisible by 11: (a)

5445 (b) 10824 (c) 7138965 (d)

70169308 (e) 10000001 (f) 901153



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Exercise 3.2

1. Write five pairs of prime numbers less than 20 whose sum is divisible by 5. Hint : $3+7 = 10$



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

(a) 21 (b) 31 (c) 53 (d) 61



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3. Fill in the blanks : (a) A number which has only two factors is called a _____. (b) A number which has more than two factors is called a _____. (c) 1 is neither _____ nor _____. (d) The

smallest prime number is _____.(e) The

smallest composite number is _____.(f) The

smallest even number is _____.



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

(a) 44

(b) 36

(c) 24

(d) 18



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



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



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



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

(a) The sum of three odd numbers is even.

(b) The sum of two odd numbers and one even number is even.

(c) The product of three odd numbers is odd.

(d) If an even number is divided by 2, the quotient is

always odd.(e) All prime numbers are odd.(f)

Prime numbers do not have any factors.(g)

Sum of two prime numbers is always even.(h)

2 is the only even prime number.(i) All even

numbers are composite numbers.(j) The

product of two even numbers is always even



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9. What is the sum of any two (a) Odd numbers (b) Even Numbers ?



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10. Which of the following numbers are prime?

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



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



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Exercise 3 5

1. In which of the following expressions, prime factorisation has been done?

(a) $24 = 2 \times 3 \times 4$

(b) $56 = 7 \times 2 \times 2 \times 2$

(c) $70 = 2 \times 5 \times 7$

(d) $54 = 2 \times 3 \times 9$



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



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3. Here are two different factor trees for 60.

Write the missing numbers: (Figure) Figure (ii)

Figure



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4. Which of the following statements are true?

If a number is divisible by 3, it must be divisible by 9. If a number is divisible by 9, it must be divisible by 3. If a number is divisible

by 4, it must be divisible by 8. If a number is divisible by 8, it must be divisible by 4. If a number is divisible by 18, if it is divisible by both 3 and 6. If a number is divisible by both 9 and 10, it must be divisible by 90. If a number exactly divides the sum of two numbers, it must exactly divide the numbers separately. If a number divides three numbers exactly, it must divide their sum exactly. If two numbers are co-prime, at least one of them must be a prime number. The sum of two consecutive odd numbers is always divisible by 4.



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



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6. Find all the prime factors of 1729 and arrange them in ascending order. Now state the relation, if any; between two consecutive prime factors.



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7. Write the smallest 5-digit number and express it in the form of its prime factors.



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8. Write the greatest 4-digit number and express it in terms of its prime factors.



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9. The sum of two consecutive odd numbers is divisible by 4. Verify this statement with the help of some examples.



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10. 18 is divisible by both 2 and 3. It is also divisible by $2 \times 3 = 6$. Similarly, a number is divisible by both 4 and 6. Can we say that the number must also be divisible by 24 ? If not, give an example to justify your answer.



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11. Determine if 25110 is divisible by 45.



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



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1. 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 a.m., at what time will they change simultaneously again?



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2. Find the LCM of the following numbers :(a)

9 and 4 (b) 12 and 5 (c) 6 and 5 (d) 15

and 40 Observe a common property in the

obtained LCMs. Is LCM the product of two numbers in each case?



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3. Find the LCM of the following numbers in which one number is the factor of the other. (a) 5, 20 (b) 6, 18 (c) 12, 48 (d) 9, 45 What do you observe in the results obtained?



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



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5. Find the smallest 4-digit number which is divisible by 18, 24 and 32

A. 1052

B. 1152

C. 1512

D. 1125

Answer: B



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6. Find the least number which when divided by 6, 15 and 18 leave remainder 5 in each case.



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7. Determine the greatest 3-digit number exactly divisible by 8, 10 and 12. and 6 ,8 and 10



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8. Three tankers contain 403 litres, 434 litres and 465 litres of diesel respectively. Find the maximum capacity of a container that can measure the diesel of the three containers exact number of times.

A. 7

B. 13

C. 62

D. 31

Answer: D



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9. Three boys step off together from the same spot. Their steps measure 63 cm, 70 cm and 77 cm respectively. What is the minimum distance

each should cover so that all can cover the distance in complete steps?



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10. Renu purchases two bags of fertiliser of weights 75 kg and 69 kg. Find the maximum value of weight which can measure the weight of the fertiliser exact number of times.



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11. The 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.



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Exercise 3 1

1. Find all the multiples of 9 upto 100.



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2. 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



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3. Write all the factors of the following numbers : (a) 24 (b) 15 (c) 21(d) 27 (e) 12 (f) 20(g) 18 (h) 23 (i) 36



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4. Write First Five Multiples of: (a) 5 (b) 8 (c) 9



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