

6

Be my multiple, I'll be your factor



A. The numbers from 1 to 100 are given below. Give the answers to the following questions.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Red**:- Circle the numbers which can be divided by 3.
- Blue**:- Circle the numbers which can be divided by 5.
- Green**:- Circle the numbers which can be divided by 8.
- Yellow**:- Circle the numbers which can be divided by 12.
- Write the numbers that are having all four coloured marks: Red, Blue, Green, Yellow.

- Write the numbers that are having only red and blue circle.

- Write the numbers that are having only green and yellow circle.

B. Fill in the blanks.

- When two or more numbers are multiplied, then each number is a _____ of the product.
- The product obtain by multiplying two or more numbers is called _____ of the numbers.
- L.C.M. means _____.
- H.C.F stands for _____.
- _____ is a factor of every number.
- Numbers divisible by 2 are called _____.
- Numbers which have only 2 factors are called _____.
- Highest factor of 6 is _____.
- First multiple of every number is _____.
- Factors are also _____ of a number.

C. Tick the numbers which are the factors of the following numbers.

Numbers	2	3	4	5	6	7	8	9	10	14
6										
12										
28										
30										
48										
56										
63										
74										
88										
96										

D. Write four factors of following numbers.

- 8 = _____
- 15 = _____
- 28 = _____
- 32 = _____
- 48 = _____

- 56 = _____
- 81 = _____
- 72 = _____
- 60 = _____
- 90 = _____

E. Make factor trees.

a. $24 =$	f. $75 =$
b. $48 =$	g. $84 =$
c. $63 =$	h. $120 =$
d. $66 =$	i. $36 =$
e. $18 =$	j. $96 =$

F. Solve the following.

- a. Maya is decorating for her birthday party. She wants to hang balloons in groups of 4. If she has 28 balloons, how many groups can she make? What are the first 5 multiples of the number of groups she can make?

Ans. _____

- b. Three frogs are playing a jumping game. Each frog jumps 5 hops at a time. How many hops will each frog have made after 2 jumps, 4 jumps, and 6 jumps? Write the first 6 multiples of 5.

Ans. _____

- c. Rohan baked 18 cookies and wants to share them equally with his friends. How many friends can he share with if he gives each friend the same number of cookies? What are the factors of 18?

Ans. _____

- d. There are 36 pencils in a box. If each pencil box holds 6 pencils, how many boxes do you need to store all the pencils? What are the factors of 36?

Ans. _____

- e. Sarah and Ben are building towers with blocks. Sarah uses blocks of length 6 cm, and Ben uses blocks of length 9 cm. What is the smallest length of a block that both Sarah and Ben can use to build their towers without breaking the blocks? What is the smallest common multiple of 6 and 9?

Ans. _____

- f. Two buses leave a station at the same time. One bus departs every 12 minutes, and the other departs every 15 minutes. What is the least amount of time they will both leave the station again at the same time? Find the smallest common multiple of 12 and 15.

Ans. _____

- g. Mr. Patel has 48 tomato seeds and 36 bean seeds. He wants to plant them in rows with the same number of tomato and bean seeds in each row. What is the greatest number of seeds he can plant in each row? What is the greatest common factor of 48 and 36?

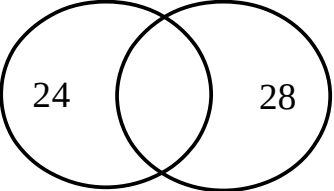
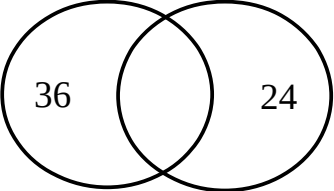
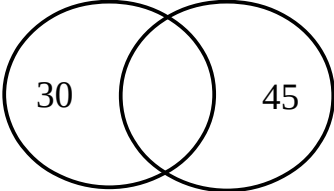
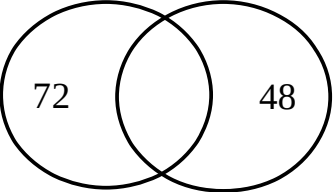
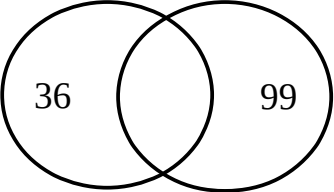
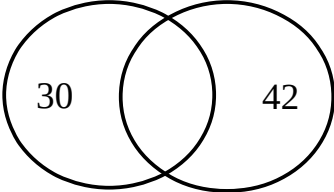
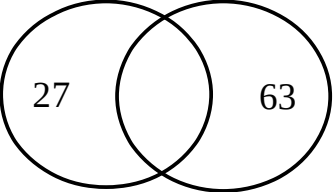
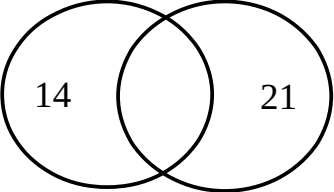
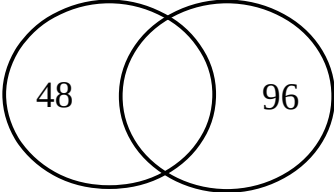
Ans. _____

G. Find the highest common factor (HCF) by prime factorisation.

a. 7, 11	b. 6, 12
7 = _____	6 = _____
11 = _____	12 = _____
HCF = _____	HCF = _____

c. 18, 36 18 = _____ 36 = _____ HCF = _____	d. 16, 48 16 = _____ 48 = _____ HCF = _____
e. 46, 28 46 = _____ 28 = _____ HCF = _____	f. 75, 25 75 = _____ 25 = _____ HCF = _____
g. 24, 180 24 = _____ 180 = _____ HCF = _____	h. 22, 44 22 = _____ 44 = _____ HCF = _____
i. 63, 36 63 = _____ 36 = _____ HCF = _____	j. 86, 64 86 = _____ 64 = _____ HCF = _____

H. Fill the following Venn diagrams. Write the common factor of the following pairs of numbers in the middle.

a. 24, 28 	b. 36, 24 	c. 30, 45 
d. 72, 48 	e. 36, 99 	f. 30, 42 
g. 27, 63 	h. 14, 21 	i. 48, 96 

Answers

A.

- The numbers divisible by 3 between 1 and 100 are: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99
- The numbers divisible by 5 between 1 and 100 are: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100
- The numbers divisible by 8 between 1 and 100 are: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96
- The numbers divisible by 12 between 1 and 100 are: 12, 24, 36, 48, 60, 72, 84, 96
- The numbers that are having all four coloured marks: 12, 24, 36, 48, 60, 72, 84, and 96.
- The numbers that are having only red and blue circle: 15, 30, 45, 60, 75, 90
- The numbers that are having only green and yellow circle: 12, 24, 36, 48, 60, 72, 84, and 96.

B.

- | | | | | |
|-----------|------------------|--------------------------|--------------------------|-------------|
| a. factor | b. product | c. Least Common Multiple | d. Highest Common Factor | e. one |
| f. even | g. prime numbers | h. 6 | i. number itself | j. divisors |

C.

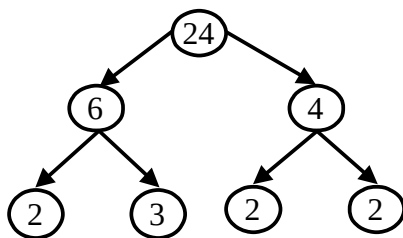
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D.

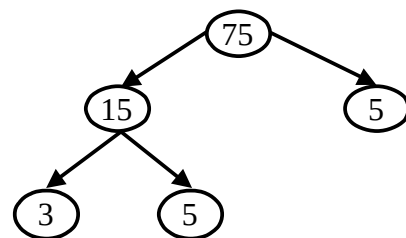
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|--|--|
| a. $8 = 1, 2, 4, 8$ | f. $56 = 1, 2, 4, 7, 8, 14, 28, 56$ |
| b. $15 = 1, 3, 5, 15$ | g. $81 = 1, 3, 9, 27, 81$ |
| c. $28 = 1, 2, 4, 7, 14, 28$ | h. $72 = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72$ |
| d. $32 = 1, 2, 4, 8, 16, 32$ | i. $60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60$ |
| e. $48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48$ | j. $90 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90$ |

E.

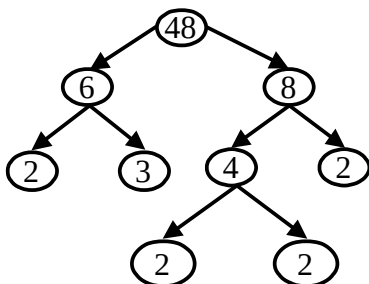
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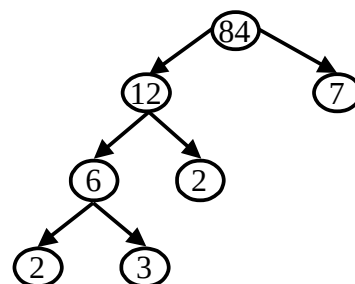
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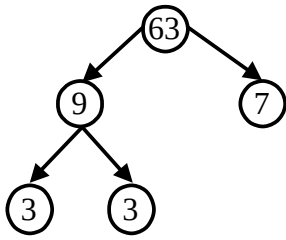
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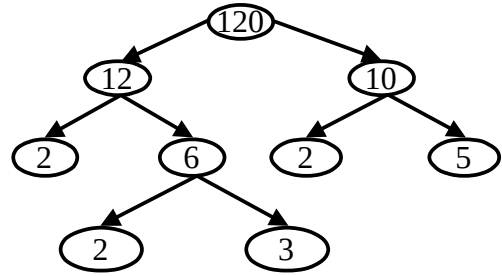
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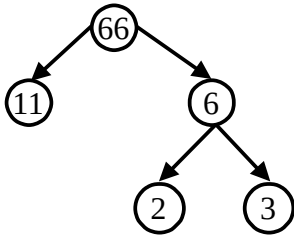
e.



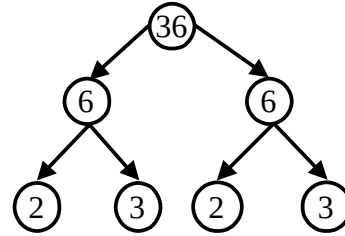
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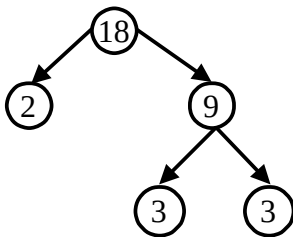
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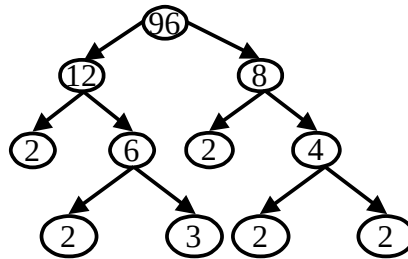
h.



i.



j.



F.

a. Maya's Balloons:

Groups: $28 \text{ balloons} / 4 \text{ balloons/group} = 7 \text{ groups}$

Multiples: $7 \times 1 = 7, 7 \times 2 = 14, 7 \times 3 = 21, 7 \times 4 = 28, 7 \times 5 = 35$

b. Froggy Jumps:

Hops after 2 jumps: $2 \text{ jumps} \times 5 \text{ hops/jump} = 10 \text{ hops}$

Hops after 4 jumps: $4 \text{ jumps} \times 5 \text{ hops/jump} = 20 \text{ hops}$

Hops after 6 jumps: $6 \text{ jumps} \times 5 \text{ hops/jump} = 30 \text{ hops}$

Multiples of 5: 5, 10, 15, 20, 25, 30

c. Rohan's Cookies:

Friends: $18 \text{ cookies} / x \text{ cookies/friend} = x \text{ friends}$ (where x is a factor of 18)

Factors of 18: 1, 2, 3, 6, 9, 18

d. Pencil Boxes:

Boxes needed: $36 \text{ pencils} / 6 \text{ pencils/box} = 6 \text{ boxes}$

Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

e. Block Towers:

Smallest common length: $\text{LCM}(6 \text{ cm}, 9 \text{ cm}) = 18 \text{ cm}$

f. Bus Departures:

Least common departure time: $\text{LCM}(12 \text{ minutes}, 15 \text{ minutes}) = 60 \text{ minutes}$ (1 hour)

g. Planting Seeds:

Greatest number of seeds/row: $\text{GCF}(48 \text{ seeds}, 36 \text{ seeds}) = 12 \text{ seeds}$

- G. a. 1 b. 6 c. 18 d. 16 e. 2 f. 25 g. 12 h. 22 i. 9 j. 2
 H. a. 4 b. 6 c. 5 d. 8 e. 9 f. 6 g. 9 h. 7 i. 15