

Exploring Multiples



Quick Review

To find the **multiples** of a number, start at that number and count on by the number.

The multiples of 5 are:

5, 10, 15, 20, 25, 30, 35, 40, ...

The multiples of 3 are:

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, ...

15 and 30 appear in both lists.

They are **common multiples** of 5 and 3.

Each common multiple of 5 and 3 is divisible by 5 and by 3.

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

Try These

1. List the first 6 multiples of each number.

- a) 4 _____ b) 9 _____
 c) 25 _____ d) 6 _____
 e) 12 _____ f) 100 _____

2. Use the hundred chart.

Colour the multiples of 7.

Circle the multiples of 3.

What are the common multiples of 7 and 3 on the chart?

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

Practice

1. Write the first 10 multiples of each pair of numbers.
Circle the common multiples of each pair.

a) 6: _____

8: _____

b) 4: _____

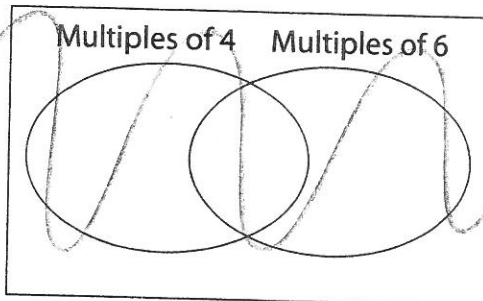
7: _____

2. Sort these numbers in the Venn diagram.

20, 33, 36, 88, 64, 48,

68, 78, 84, 32, 76, 90,

12, 54, 65, 42, 66, 102



3. Find all the common multiples of 8 and 12 that are less than 100.

4. Find the first 3 common multiples of each set of numbers.

a) 2, 3, and 9 _____ b) 2, 3, and 5 _____

c) 4, 5, and 10 _____ d) 6, 7, and 8 _____

5. Use a calculator. Find the first common multiple of each pair of numbers.

a) 16 and 18 _____ b) 12 and 16 _____

c) 12 and 15 _____ d) 11 and 12 _____

Stretch Your Thinking

Bethany wears jeans every 2 days. She wears running shoes every 3 days. If she wears jeans with running shoes on May 1, what are the next 3 dates on which she will wear both jeans and running shoes?



Prime and Composite Numbers



Quick Review

- You can make only 1 rectangle with 7 tiles.

7 has 2 factors: 1 and 7

7 is a **prime number**.

A prime number is a number greater than 1 that has exactly 2 factors: 1 and itself.



$$1 \times 7 = 7$$

- You can make 3 different rectangles with 12 tiles.



$$1 \times 12 = 12$$

12 has 6 factors: 1, 2, 3, 4, 6, and 12

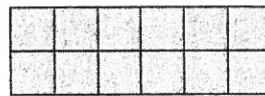
The factors that are prime numbers are 2 and 3.

12 is a **composite number**.

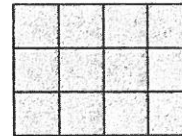
A composite number is a number with more than 2 factors.

A composite number can be written as a product of prime factors:

$$12 = 2 \times 2 \times 3$$



$$2 \times 6 = 12$$



$$3 \times 4 = 12$$

Try These

1. List all the factors of each number.

a) 15 _____ b) 18 _____ c) 27 _____

d) 34 _____ e) 8 _____ f) 5 _____

2. Tell if each number in question 1 is prime or composite.

a) _____ b) _____ c) _____

d) _____ e) _____ f) _____

3. Write 2 numbers less than 50 that have exactly 3 factors.

Investigating Factors



Quick Review

- When we find the same factors for 2 numbers, we find **common factors**.

The factors of 12 are: 1, 2, 3, 4, 6, 12

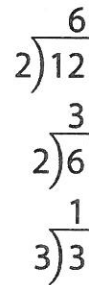
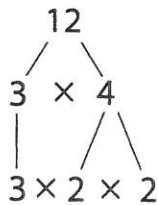
The factors of 16 are: 1, 2, 4, 8, 16

The common factors of 12 and 16 are 1, 2, and 4.

- Here are 2 ways to find the factors of 12 that are prime numbers.

- Draw a factor tree.

- Use repeated division by prime numbers.

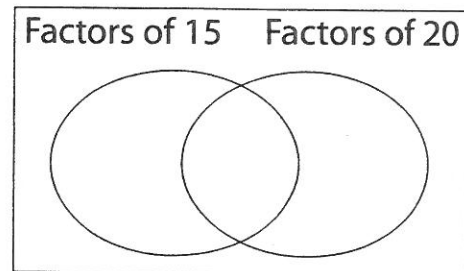


The factors of 12 that are prime numbers are 2 and 3.

Try These

- Use the Venn diagram to show the factors of 15 and 20.

What are the common factors? _____



- Find all the factors of each number.

a) 36 _____

b) 45 _____

c) 60 _____

Practice

1. Find the common factors of each pair of numbers.

a) 30, 50 _____

b) 16, 42 _____

2. Find the factors of each number that are prime.

a) 45

b) 32

c) 70

Factors that are prime:

____, ____

Factor that is prime:

Factors that are prime:

____, ____, ____

Stretch Your Thinking

Draw 3 different factor trees for 72.