Year 6

Number Awareness

Week 8

Primes

Some numbers have more factors

Factors of 18

1×18

2×9

3×6

Number of factors: SIX

Factors of 19

1×19

Number of factors: TWO

Factors of 20

1×20

2×10

4×5

Number of factors: SIX

Do all even numbers have SIX factors?

Do all odd numbers have TWO factors?

Do any numbers have an ODD number of factors?

Which number between 20 and 40 has the most factors?

What are prime numbers?

PRIME NUMBERS have EXACTLY TWO factors. No more. No less

Factors of 7

1×7

$2 \times \ldots$ nope

$3 \times \ldots$ nope

$4 \times \ldots$ nope

$5 \times \ldots$ nope

$6 \times \ldots$ nope

Number of factors: TWO

so

7 is a PRIME number

Is 1 a prime number?

What about 0?

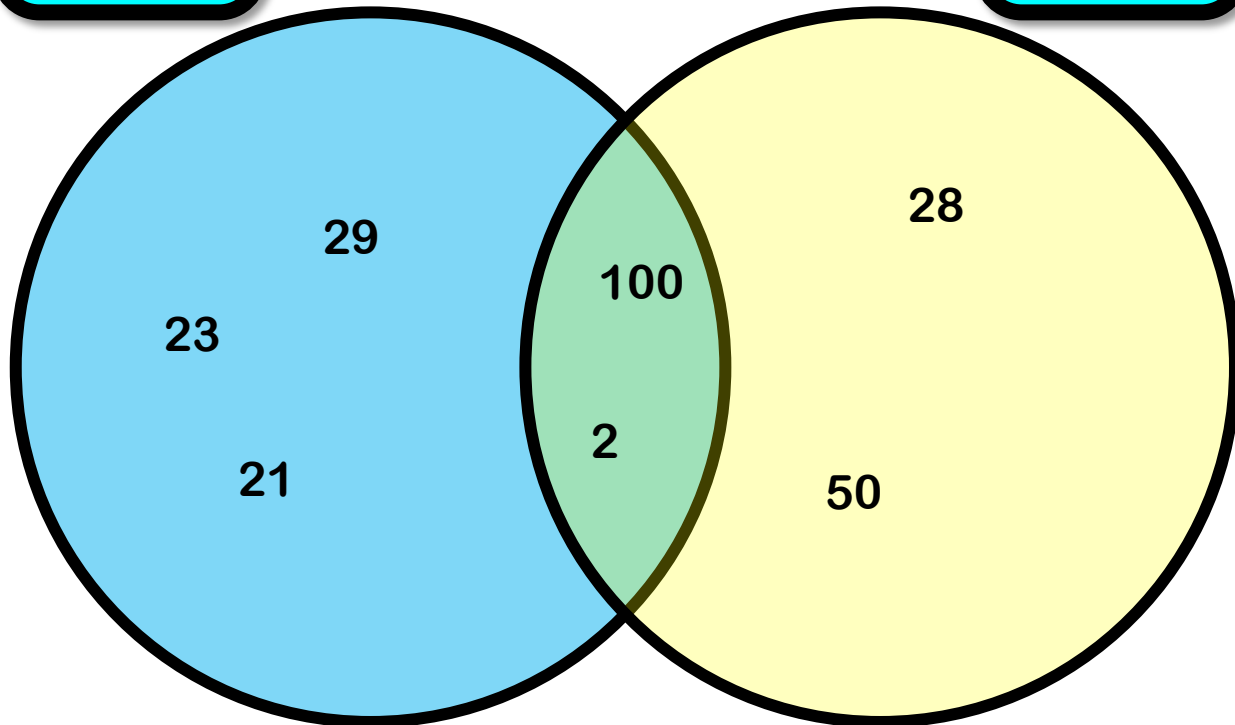| 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Which row has the most prime numbers?

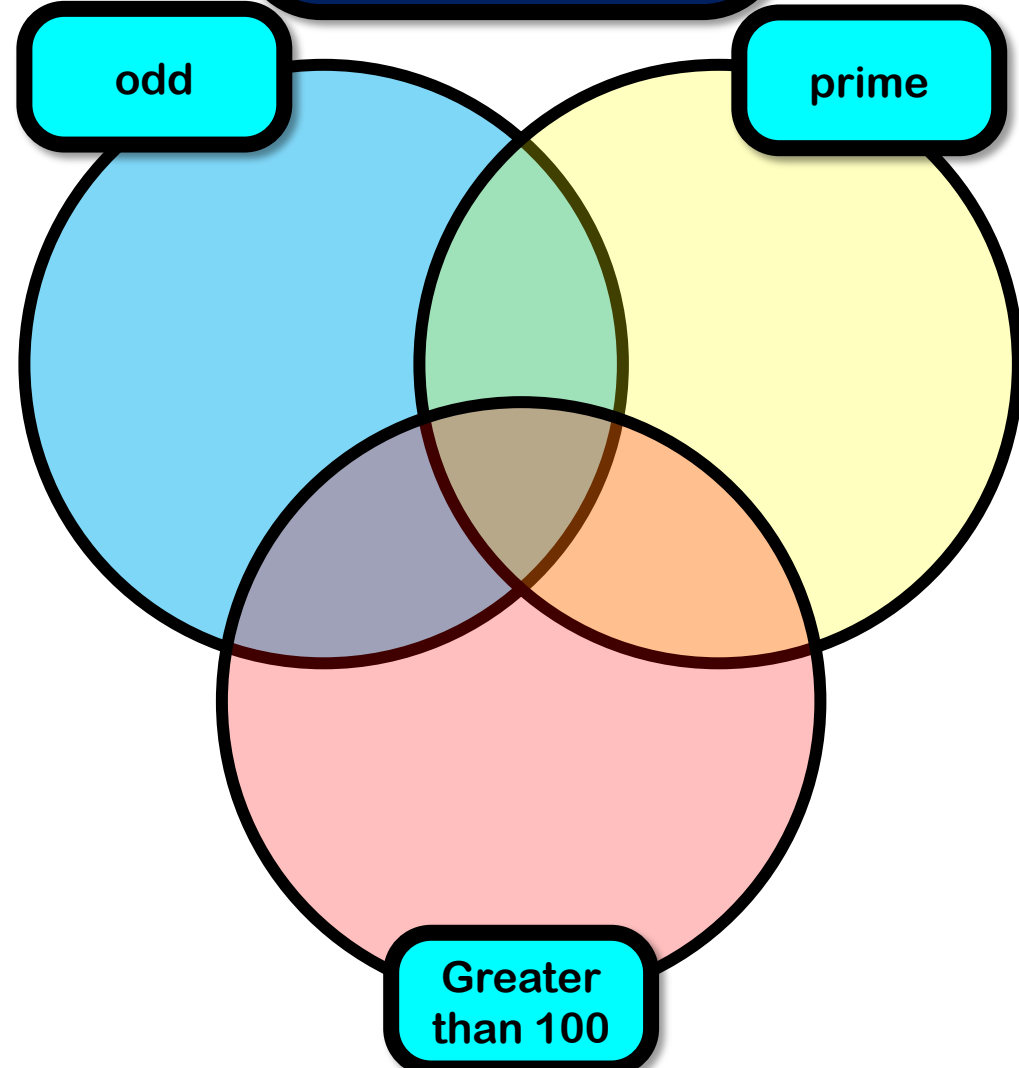# Which numbers are prime?

Two numbers are in the wrong place

Write one number in each section

prime

even

29

28

100

23

2

21

50

odd

prime

Greater than 100

Multiplying primes together

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

I have highlighted the first 4 prime numbers

How many more prime numbers can you find?

$10 = 2 \times 5$

Which other numbers can you make by multiplying <u>two</u> prime numbers?

$12 = 2 \times 2 \times 3$

Which other numbers can you make by multiplying <u>three</u> prime numbers?

**How many prime numbers do you need to multiply to make…
100
80
75
1000?**

Conjectures

201 is a prime number

Some prime numbers are also square numbers

123,456 is a prime number

Decide if you agree or disagree.

Find examples and counter examples, or give reasons.

The difference between two primes is an odd number

The product of two prime numbers ends in a 0

Find a prime number.
Add two.
The result is prime more often than not.