Mathematics

The twin prime conjecture Unsolved maths problems
Downloadable resource

Miss Kidd-Rossiter

Try this

I am going to investigate the difference between consecutive prime numbers up to 100.

Yasmin

What is the smallest difference Yasmin could have found?

What is the largest difference Yasmin could have found?

What do you notice about the differences?

Connect

There are infinitely many primes, p, such that $p + 2$ is also prime.

Independent task

1. Find the first pair of twin primes greater than 100.

2. Find the first pair of twin primes greater than 1,000.

3. Find the first pair of twin primes greater than one million.

4. Find the first pair of twin primes greater than one billion.

5. Find the first pair of twin primes greater than one thousand billion.

Explore

For any positive even number, n, there are infinitely many prime gaps of size n.

Alphonse de Polignac (1849)

How is Polignac's conjecture different to the original twin prime conjecture?

Can you find examples of prime pairs where n is ≤ 20?