

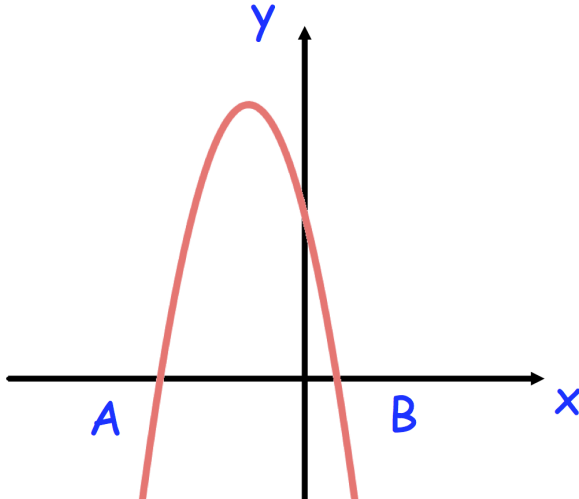


n is the set of even numbers from 1 to 200

O is the set of odd numbers
 P is the set of prime numbers
 C is the set of cube numbers
 S is the set of square numbers

How many numbers are there from set n that are in the set

$$O \cup P \cup C \cup S$$



Shown is a graph $y = f(x)$ where $f(x)$ is a quadratic function.
 The coordinates of point A are $(-4, 0)$
 The maximum point is $(-1.4, 2.6)$

Write down the coordinates of point B

The equation $f(x) = k$ has exactly one solution.

Write down the value of k

Mrs Jenkins runs a company that makes decorations for weddings.
 She needs $18\sqrt{5}$ metres of ribbon in total.
 Mrs Jenkins has 40 metres of ribbon.

Without using a calculator, work out if she has enough ribbon.

The point A has coordinates $(-6, 0)$
 The point B has coordinates $(0, 3)$
 The point C has coordinates $(9, -1)$

Find the equation of the line that passes through C and is perpendicular to AB.