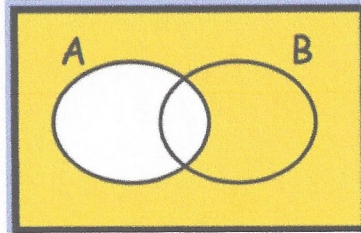


11th October



Corbettmaths

Which region is shown in yellow?



Work out the nth term of the sequence

8, 11, 16, 23, 32 ...

3 5 7 9
2 2 2

$a=1$ $b=0$ $c=7$

$an^2 + bn + c$

$n^2 + 7$

The ratio of Matt's age to Paul's age is x:y

Two years ago, the ratio of their ages was 5:8

In three years time, the ratio of their ages will be 2:3

Express x:y in its lowest terms

~~27:42~~

$$\frac{x-2}{y-2} = \frac{5}{8} \qquad \frac{x+3}{y+3} = \frac{2}{3}$$

$$8x - 16 = 5y - 10 \qquad 3x + 9 = 2y + 6$$

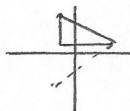
$$8x - 5y = 6 \qquad 3x - 2y = -3$$

Solving gives

$x=27$ $y=42$ $9:14$

The distance between (-3, a) and (5, 1) is 17 units.

Find two possible values for a.



$$8^2 + (1-a)^2 = 17^2$$

$$64 + (1-a)(1-a) = 289$$

$$64 + 1 - 2a + a^2 = 289$$

$$a^2 - 2a - 224 = 0 \qquad x=16 \text{ or } x=-14$$

The numbers m and n are irrational and are not the same.

m + n is rational

Write down possible values for m and n

$m = \sqrt{7}$
 $n = 5 - \sqrt{7}$