

Treasure hunt

Introduction to SYK math club

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Some general information

Points to keep in mind:

- 1 Basics of coordinates
- 2 How will the checkpoints look?
- 3 Remember to keep a record of all answers in the order you got them
 - ▶ We will look at one example together.
- 4 Using Google Maps is the most convenient

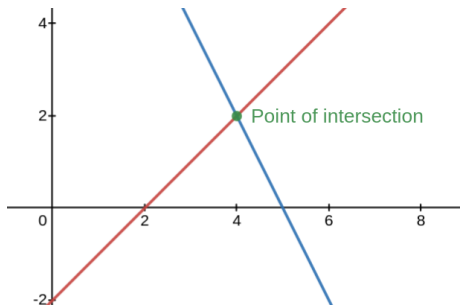
Quick math review:

- co-prime numbers
- perfect squares
- Pythagorean triplet

Question

The lines $y = x - 2$ and $y = -2x + 10$ intersect at the point (a, b) .

Your first coordinates are **60.212a97, 24.889b75**



Question

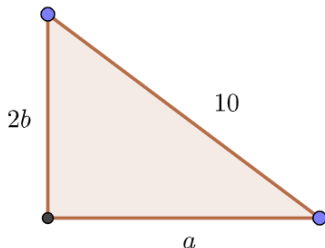
- ① Multiplying any real number by **a** always results in **a** .
- ② Multiplying any real number by **b** always gives back the number itself.

Your next coordinates are **60.213a42, 24.890b20**

Question

- 1 $(a, 2b, 10)$ forms a Pythagorean triplet.
- 2 $a = 3b - 1$

Your next coordinates are **60.212a11, 24.891b43**



Question

"I am composed of two digits, you see,
Their sum equals eight, believe me.
A multiple of seven, not so obscure,
A prime factor is a part of my allure.

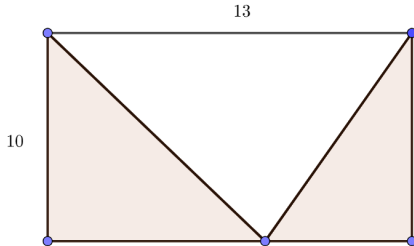
The answer to the above riddle is a two digit number whose first digit is ***b*** and whose second digit is ***a***.

Your next coordinates are **60.211a52, 24.889b72**

Question

- 1 The area of the shaded part in the figure given below is $5(a + b) \text{ cm}^2$.
- 2 a and b are both perfect squares.
- 3 a is smaller than b .

Your next coordinates are **60.211a79, 24.888b75**



Question

- ① A traditional dice has a faces.
- ② The next number in the sequence 256, 128, 64, 32, 16, 8 is b .

Your next coordinates are **60.211a49, 24.888b39**

Question

- ① Answer of the riddle below is the number ***a***.

I'm prime and lucky, that's true,
A single digit, not too few.
Less than ten, but more than five,
In this riddle, I come alive.

- ② The number ***b*** is the product of the first two prime numbers.

Your next coordinates are **60.212a07, 24.888b47**

Question

- ① a is the first prime number.
- ② $b = 3 \cdot a$.

Your next coordinates are **60.212a71, 24.890b19**

Question

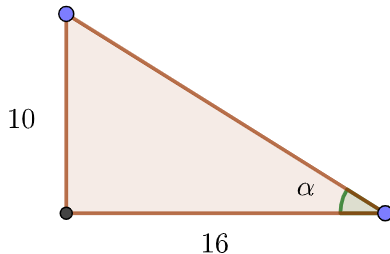
- 1 $2 \cdot a + 40 = 40$.
- 2 b is the smallest even composite (non-prime) number.

Your next coordinates are **60.212a53, 24.889b88**

Question

In the figure given below, $\tan \alpha = \frac{a}{b}$, where ***a*** and ***b*** are co-prime numbers.

Your next coordinates are **60.212a61, 24.889b43**



Question

Careful! ***a*** from last checkpoint is now ***b*** and ***b*** from last checkpoint is now ***a***.

Your next coordinates are **60.211a41, 24.890b78**

Question

"I am a number, neat and round,
Divisible by many, I'm renowned.
Seconds in a minute, ticks in an hour,
Factors aplenty, I hold power.

The answer to the above riddle is a two digit number whose first digit is ***a*** and whose second digit is ***b***.

Your final coordinates are **60.211a90, 24.889b66**

HEAD TO THE START!

Hurry up! Scan it!

