Programming is about finding patterns and tearing problems apart. Can you solve these problems?

**What is the next number in this series?**

1, 2, 4, 8, 16, \_\_\_\_

1, 2, 4, 7, 11, 16, \_\_\_\_

**What order did the racers finish?**

* Dante finished before Annie
* Becca wasn't third
* There were two runners between Annie and Carlos

1st\_\_\_\_\_\_\_\_\_ 2nd\_\_\_\_\_\_\_\_\_ 3rd\_\_\_\_\_\_\_\_\_ 4th\_\_\_\_\_\_\_\_\_\_

**What is the name of the fourth child?**

* Mary's mom has four children
* The first child is called April
* The second May
* The third June
* The name of the fourth is? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What are the next two numbers?** (Sometimes two patterns are entwined)

2, 5, 3, 4, 4, 3, 5, 2, \_\_\_, \_\_\_

17, -4, 16, -3, 15, -2, 14, -1, \_\_\_, \_\_\_

**What comes next?** (don’t take all **month** to think about it)

J F M A M J \_\_

J A S O N \_\_

**What is special about these words** (especially with this font style)

KICK BIKE OX BOX DO

DIE HIDE DOE DOX BE

BID HIKE HOE BED HI

Coding is about seeing a pattern and using that pattern someplace else.

Examine the line of code below.

**people = passengers.filter(p => p.Job == 'Musician');**

people will save a list of passengers that were Musicians on the Titanic

passengers is a list of people on the Titanic. A passenger has a number of attributes:

Job, FirstName, LastName, Age, Survivor, Class (1st, 2nd, 3rd)

**filter** is a function that finds passengers with certain attributes; for instance

(HairColor == ‘Brown’, Age > 50, Job == ‘Musician’)

Now let’s change that line of code to find all **1st** **Class** passengers. Copy the line above and change only the fields that would return you a list of 1st class people. We’ll get you started.

**\_\_\_\_\_ = passengers.filter(p => p.\_\_\_\_\_ == ' ');**

Now let’s change that line of code to find all passengers older than 25. Copy the line above and change only the fields that would return you a list of people over 25.

One more time. Find all passengers that survived. Copy the line above and change only the fields that would return you a list of survivors.

In programming the order, we do things matters. You can’t approve a new hire until you do the interview. You can’t start a car without pressing ignition with the break on. You have to crack the eggs before you mix them in a cake mix. Programming is a lot like following a recipe. The order matters, the amount maters. Look at this common list of clothing and tasks put them in the logical order for getting ready for the day

***shoes \_\_\_\_ pants \_\_\_\_***

***shorts \_\_\_\_ socks \_\_\_\_***

***t-shirt \_\_\_\_ tie \_\_\_\_***

***shirt \_\_\_\_ belt \_\_\_\_***

***tie shoes \_\_\_\_ walk out door \_\_\_\_***