

HOMEWORK 1

Thank you for your participation in class today. You all did great!

Your homework has five fun questions to solve.

Here's what you need to do:

- 1) Complete all five questions on your own.
- 2) If you get stuck, don't worry! Just try your best and show how you thought about the problem.
- 3) Make sure to show your work when you submit your homework. I want to see how you worked through the problems and how you approached each one.
- 4) Feel free to print out this worksheet if you want to.
- 5) Q1, Q2, etc. at the beginning of the questions stand for "Question 1," "Question 2," and so on.
- 6) Submit your homework at least three days before our next class by emailing it to me at: info@oxbridge.ru and gamzekazakoglu14@gmail.com

I'm excited to see your answers. Have fun with it, and see you in the next class! □

Q1) MYSTIFYING MATH

Some curious Moonlings have left you a math riddle to solve.
Hmm...perplexing!

I am a prime number between 1 and 20. Multiply me by 9 and divide me by 3. Then subtract 3 from the answer and you'll have 30. What am I?



Q2) WHAT NUMBER AM I?

I am a four-digit number whose digits add up to 10.
None of my digits are 0 and none of my digits repeat.
My first number is the greatest and I am even.
My first two numbers and my last two numbers have the same sum.



Q3) TANGLED RELATIONS

If the only brother of your father's only sister only has one child, what is that child's relationship to you?



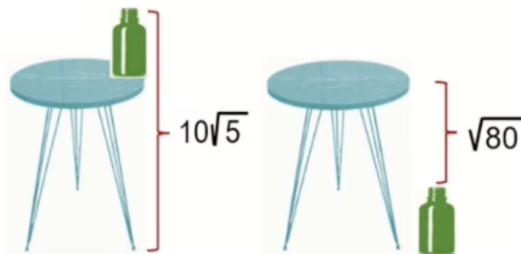
Q4) FRIENDS IN LUNCH

Four friends are getting together for lunch and have a square table with four seats.

In how many ways can they arrange themselves around the table?



Q5) HEIGHT PUZZLE



As seen in the figures above, if the bottle is placed on the table, the distance from the tip of the bottle to the ground is $10\sqrt{5}$ cm, and if the bottle is placed on the ground, the distance from the tip of the bottle to the table is $\sqrt{80}$ cm. What is the height of the bottle?