Intellectual Club

Meeting 3

OUR AGENDA

Homework	We will check our answers for the homework. Each person gets to answer one question.
New Tasks	Time to brainstorm on new problems. This week, we will focus on probability!

Let's get started with the homework!

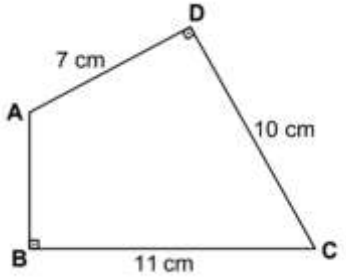
Q1) FINDING |AB|

In the quadrilateral ABCD shown in the figure, **[AB] ⊥ [BC]** and **[AD]⊥[DC]**.

Given that:

|AD|=7 cm, **|DC|=10** cm, **|CB| =11** cm

what is the length of **|AB|** in centimeters?



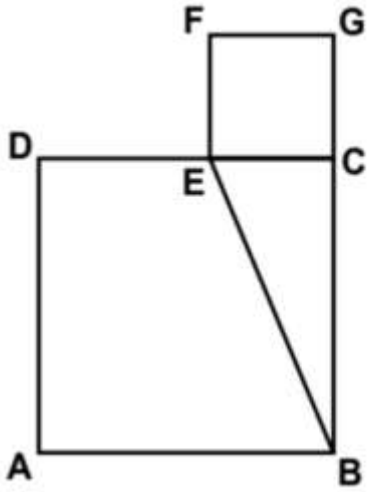
Hint: ⊥ means that these lines are perpendicular to each other. For example, in this case, [AB] ⊥ [BC] means that [AB] and [BC] are line segments perpendicular to one another, so they meet at a right angle (90 degrees).

Q2) FINDING |EB|

In the figure, ABCD and FECG are squares.

The area of square ABCD is 144 cm^2, and the area of square FECG is 25 cm^2.

Given this information, what is the length of |EB| in centimeters?



Q3) A BAG OF BEADS

A bag contains four green beads, six blue beads, and three red beads. Grace takes a bead at random from the bag, records its colour and replaces it. She does this two more times.

Work out the probability that, of the three beds Grace takes, exactly two are the same colour.

Q4) SOCKS IN THE DRAWER

Sasha has eight red and four blue socks in her drawer. If she removes two socks from the drawer, one after the other, calculate the probability that:

1) both socks are red
2) both socks are blue
3) the socks are different colours.

Moving on to probability problems!

Group huddle – get into pairs of three!

THE CAR DEALER

A car dealer can order a car in 3 colors and 2 engine sizes. If one of the colors is red and one engine is a V-6, what is the probability a car shipped at random will be red, with a V-6?

Challenge a friend – can they solve faster?

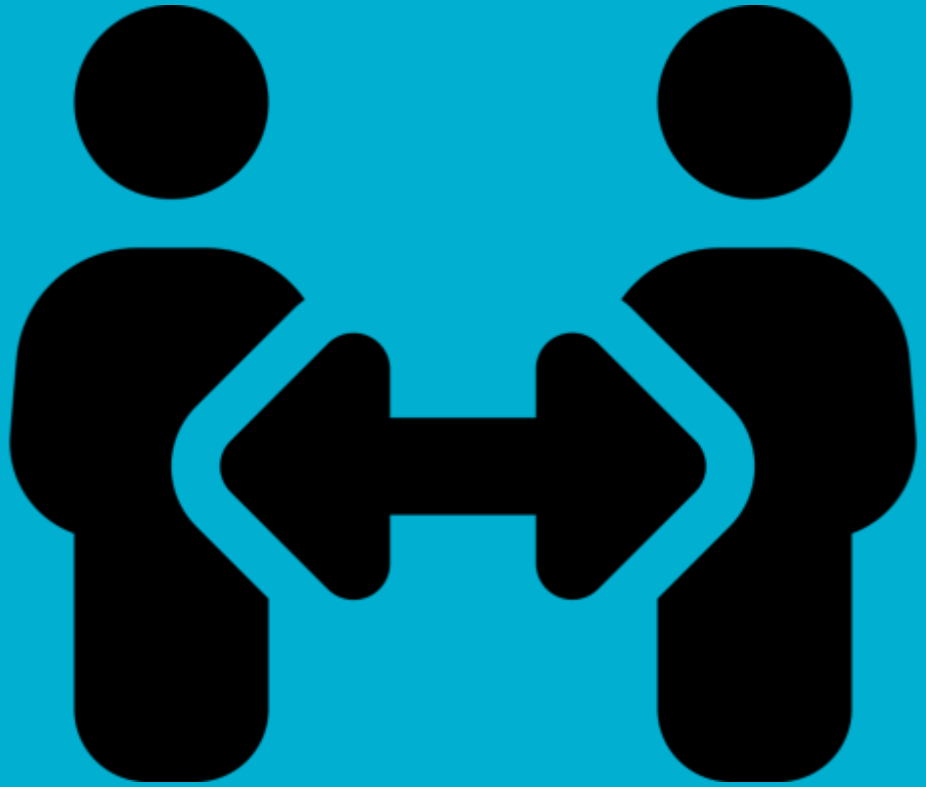
THE STUDENT PICK

In a class there are 9 boys and 6 girls. The name of one of the girls is “Sasha.” A student is taken at random. What is the probability of taking “Sasha” if we know that we took a girl name?

Brainstorm together with a partner

THE TEAM

In a group of 15 students the coach wants to form a team of 7 players. If 3 players has been chosen already, find in how many different ways can the rest of the team be formed.



Swap answers and compare!

GIRLS AND BOYS

In a group of students there are 5 girls and 3 boys. 3 students are taken at random to form a group. Find the probability of getting 2 boys and a girl.

Discuss in pairs…be ready to present!

DIVIDING NUMBERS

What is the number of 4-digit natural numbers which are divisible by 5?

Trade & tweak…swap your answers with a peer!

A BAG OF CARDS

In a bag, there are 6 black and 5 white cards.
Two cards are taken at random at the same time.
Find the probability of getting:

1) 2 black cards
2) 2 white cards
3) one white and one black card

Team up trio… form groups of three!

FORMING NUMBERS

These are the elements in the set {2, 3, 4, 5}. How many different 4-digit numbers can be formed using these elements if:

1) No digit may be repeated?
2) Any digit may be repeated?
3) No digit may be repeated and the number must be an odd one?

Double trouble...team up and solve twice as fast!

TRAVELING CITIES

Alice and Emma can travel from city A to city B by air, land, sea, or rail. What is the probability that they choose the same mode of transportation?

Peer review...swap solutions and give feedback!

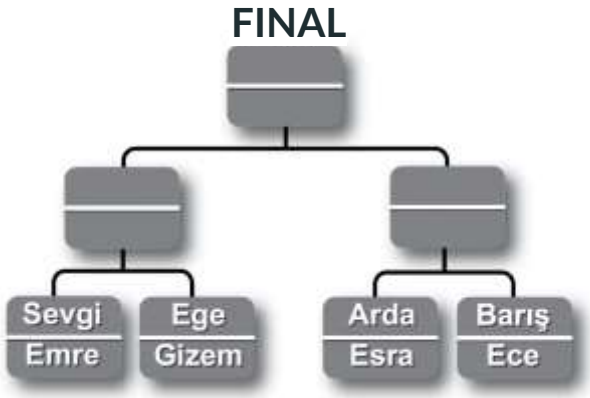
A BAG OF MARBLES

A bag contains 5 red, 4 blue, and 3 green marbles. You randomly draw three marbles one after another without replacement.

1. What is the probability that all three marbles are different colors?
2. What is the probability that at least two of them are the same color?

Solve & switch…solve and trade with a partner!

THE CHESS TOURNAMENT



In the chess tournament shown, 8 students with equal probabilities of winning participate, and their match-up chart is provided.

Given that the tournament is a single-elimination (loser is eliminated) format, what is the probability that Sevgi and Barış will face each other in the final?

End of class – well done!

Thank you for your participation.

You will take your homework from the website. It will be uploaded on Monday. As always, please submit it at least three days before the next class.

Don’t hesitate to email me if you have any questions: **gamzekazakoglu14@gmail.com**