Name: _____ Date: _____

Lamine Yamal and the Arithmetic of Youngest

Reading level 13 · 1513 words

Lamine Yamal holds a long list of "youngest ever" records, and each one is a sentence with a hidden definition. Youngest to do what, in which competition, counted to which day, and listed by whom? This book reads the records of one Spanish winger, born in 2007, who through November 2026 plays for FC Barcelona and for Spain, the way a scientist reads a measurement. It asks what each number actually establishes, what it leaves out, and where two official pages disagree with each other. Its main specimen is a curling goal in Munich on July 9, 2024. That goal produced one of the records, and it is also a useful problem in physics.

UEFA states these records in years and days, and the days are the point. For Euro 2024, its lists give 16 years 338 days for his first appearance, on June 15, 2024; 16 years 353 days for his first knockout game, in the round of 16; and 16 years 362 days for the semi-final goal, on July 9. The gaps between those figures are 15 days and then 9 days, which together equal the 24 days between June 15 and July 9. By our arithmetic, the three records are consistent. Each is a date of birth subtracted from a date of play, and UEFA records the answer to the day, which is fine enough to decide which of two marks is the younger.

The same care is needed with club records. Barcelona's site says that in April 2023 he made his debut in a 4 to 0 win over Real Betis, aged 15 years, 9 months and 16 days. His player page calls him the youngest player ever to represent the club. The club's own match report is narrower: it calls him the youngest Barcelona debutant in La Liga, and says three players were younger when they debuted in the old Catalan Championship, in 1903, 1912 and 1920. The Catalan Championship no longer exists, and a record is only as broad as the list of games behind it. The claim both club pages support is therefore the narrower one, youngest in La Liga.

His Spain debut raises a problem of dates. UEFA lists his first cap and first goal in a Euro qualifier against Georgia on September 8, 2023, a 7 to 1 win, at 16 years 57 days, about half an hour after he came on as a substitute. Barcelona's site says he is the youngest player and the youngest goalscorer in Spain's history. An article by Spain's football federation, written after the Euro semi-final, dates the scoring record to "October last year", which would be 2023. The federation article was published on the day of the semi-final. No page explains the difference. UEFA's list gives September 8, 2023, the date of the Georgia match.

A record also needs time on the field. Euro 2024 was played in Germany from June 14 to July 14, 2024, with 24 teams in six groups of four. The top two in each group and the four best third-place teams reached the round of 16, and the whole event came to 51 games. Yamal appeared in all seven of Spain's games and started all but the group game against Albania,

and UEFA counts one goal and four assists for him over the month. The records that followed were therefore not the product of one lucky night, but of a player who was in the starting lineup in six of seven games.

Each Euro record replaced an earlier mark, and the size of the step is itself a number. UEFA's lists put the old youngest Euro player at 17 years 246 days, from the 2021 tournament; he lowered it to 16 years 338 days, about nine months. The old youngest Euro scorer was 18 years 141 days, from 2004; his 16 years 362 days is lower by about a year and five months. The old youngest player in a Euro or World Cup final was 17 years 249 days, from the 1958 World Cup final; his 17 years 1 day is lower by about eight months. The Euro-only mark, from 2016, was 18 years 328 days. These differences are our arithmetic, using 365-day years, so a leap day can move them by one.

The goal is also a lesson in uncertain measurement. France had scored first. Sky Sports recorded Yamal's equalizer in the 21st minute, a shot curled in off the post from 25 yards, which is 22.9 meters. Spain's football federation says 25 meters, a difference of about two meters. It also gives a speed of 102 kilometers an hour, about 63 miles an hour, and its article does not say how that speed was measured. A ball slows as it flies, so a speed taken early in the flight is not the speed that reaches the net. A single number without its method is an estimate, not a measurement.

Why did the ball bend? A kicked ball feels gravity and drag. If it spins, a third force appears, the Magnus force, named for the German physicist Heinrich Gustav Magnus, who demonstrated it in 1852. Its direction is perpendicular to the ball's motion and to the axis it spins around. Arun Bansil, a physicist at Northeastern University, said many forces act on a kicked ball, and called the Magnus force the "absolute key" to bending it. As the ball turns, one side of its surface moves with the oncoming air and the other moves against it. That accelerates the air on one side and slows it on the other.

Bernoulli's principle then supplies the rest: the faster air has lower pressure, and the pressure difference pushes the ball sideways, toward the faster air. Lecture notes from the Institute of Mathematical Sciences in Chennai describe the same force a second way. On the side where the surface moves with the airflow, the air separates from the ball later. The flow around a spinning ball is therefore not symmetric, and by Newton's third law there is a reaction force on the ball. The notes add that pure side spin creates a strong horizontal force, which swerves the ball to the right or left, depending on whether it turns clockwise or anticlockwise.

Not every honor is a measurement. UEFA's technical observers, who "analysed proceedings from a coaching perspective" and chose a Player of the Match for each game, picked a top ten of the tournament's goals and ranked Yamal's curl against France first as the official Goal of the Tournament. That is an expert's judgment. An assist is closer to a rule. The stats company Opta defines a goal assist as the last touch by a teammate that leads to the scorer's

goal, and says a deflection by an opponent does not change the credit. UEFA gives him four at Euro 2024. He was named Young Player of the Tournament.

Seasons are counted by the club, and a club's totals are only as complete as its definitions. Barcelona's page gives 50 appearances and 7 goals for 2023/24, when he became the youngest player to reach 50 first-team appearances for the club. For 2024/25 it lists 18 goals and 21 assists, and it says he became the youngest to make 100 appearances. For 2025/26 it lists 24 goals and names him La Liga Player of the Season. In October 2024 he received the Kopa Trophy at the Ballon d'Or gala in Paris. The award goes to the best player under 21, chosen by a jury of former Ballon d'Or winners, though the club's page calls it an under-23 award.

Some of his records are still moving. At the 2026 World Cup he scored his first goal in that tournament in the group stage, in Spain's win over Saudi Arabia on June 21, 2026, and the club's honors list shows that Spain went on to win the World Cup. On November 3, 2026, he scored before the 10th minute of Barcelona's 3 to 0 Champions League win over Aston Villa. The club's Spanish match report says it made him the Champions League's top scorer among players under 20. That kind of record is a running total with an age line: it can keep growing until he turns 20 in 2027.

Every figure here is dated through November 2026, and each record has a condition for losing it. The Euro marks can fall only at a Euro finals, though the semi-final and final records also count World Cup games. The next Euro is scheduled for June 9 to July 9, 2028, hosted by England, the Republic of Ireland, Scotland and Wales. The Spain marks fall only when someone younger than 16 years 57 days plays or scores for the national team. Those marks are hard to break. They need a player under 16 years 57 days to play, or to score, for Spain, which is a very small window. What the numbers cannot say is who comes next, or when. The method, however, is already fixed: a date of play, a date of birth, and an exact subtraction.

Questions

1. What do UEFA's list and Spain's football federation disagree about?

A. Who won the match against Georgia

B. When Yamal set Spain's scoring record

C. How many assists he had

2. What does the book say about the 102-kilometer-an-hour shot speed?

A. It was timed by the referee

B. It is the fastest recorded at the Euro

C. The article does not say how it was measured

3. In the sentence "The flow around a spinning ball is therefore not symmetric," what does symmetric mean?

A. Evenly balanced
B. Very fast
C. Fully circular

4. Which is described as an expert's judgment rather than a rule?

A. An assist
B. A match score
C. The Goal of the Tournament

5. What would be needed to break the Spain marks for youngest player or scorer?

A. A player younger than 16 years 57 days playing or scoring for Spain
B. A goal at a Euro
C. A longer season

Words to know

arithmetic: number work
perpendicular: at right angles
symmetric: evenly balanced
judgment: expert opinion
qualifier: entry match
deflection: changed path

Answer key: Lamine Yamal and the Arithmetic of Youngest

1. B. When Yamal set Spain's scoring record
2. C. The article does not say how it was measured
3. A. Evenly balanced
4. C. The Goal of the Tournament
5. A. A player younger than 16 years 57 days playing or scoring for Spain