

High School:

Indy 500

1. The Indianapolis Motor Speedway (IMS), the "Brickyard," is a 2.5-mile rectangular oval track with four turns and two straightaways. Each of the four turns is $\frac{1}{4}$ mile long, and the front and back stretches are $\frac{5}{8}$ mile long. The short straightaways between turns 1 and 2, and 3 and 4 are $\frac{1}{8}$ mile long. The track is 50 feet wide on the straights and 60 feet wide in the turns. This provides a total surface area of 78,000 square yards. The track is known as the "Brickyard" because it was once made of 3.2 million bricks. Currently a 3-foot strip of bricks still indicate the start/finish line. What percent of the original bricks remain on the track?

Answer	
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2. The Indy 500 race is considered the largest single day sporting event in the world. In 2024 fan attendance hit 345,000 for race day alone. Compare this number to the attendance at other major sporting events: FIFA 2022 (88,966), Superbowl 2025 (65,719), NBA Finals (50,621), MLB Championship game (50,621). Do you agree that the Indy 500 is the largest single day sporting event in the world? Justify your answer using mathematical reasoning.

3. IndyCar race cars have very poor fuel economy, averaging less 1.8 miles per gallon. This is due to the high speeds they achieve, with average lap speeds of 210 mph and top speeds exceeding 230 mph. IndyCars use a blend of 85% ethanol and 15% high-octane racing fuel, referred to as E85. A fuel tank typically holds 18.5 gallons. The fuel cost \$2.49 per gallon. What is the cost of the fuel needed to complete the Indy 500? Justify your answer.
