

Bergen County Math League

Calculators Permitted

Good Luck to You



Good Luck to All

Contest #5

2023-2024 12 minutes

Questions 1 & 2

- 5-1. The wall of an eccentric millionaire reads as follows: "I leave $\frac{4}{17}$ of my estate to my son, $\frac{7}{13}$ of the remainder to my wife, $\frac{2}{3}$ of the remainder to my daughter, and the remaining \$2 million to my dog." What was the total amount of the estate?
- 5-2. Two trains start out at the same time, traveling along parallel tracks, one going from Pillar to Post, and the other going from Post to Pillar. If the first train takes 6 hours and the second train takes 9 hours for the trip, after how many hours will the two trains pass each other, assuming that each train travels at a constant rate and that no stops are made by either train?

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Questions 3 & 4

- 5-3. A father bought a ball and a bat for his son. The two together cost \$12.50. The bat cost \$2.50 more than the ball. How much did the ball cost?
- 5-4. Amazing Al bet Bashful Bernie $\$X$, at the rate of \$1 to \$3, that the Bullets would win. Al then bet Crazy Charlie $\$Y$, at the rate of \$2 to \$1, that the Bullets would lose. Find the ordered pair, (X, Y) for which Al would make a profit of \$10 whether the Bullets win or lose.

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Questions 5 & 6

- 5-5. Two concentric circles are such that a chord of the larger (thirty-six inches long is trisected by the smaller. The sum of the radii of the two circles is also thirty-six inches. Find the length, in inches, of the larger circle's radius.
- 5-6. A two-digit number in base 5 has its digits reversed when written in base 3. What is the representation of this number in base 6?