MATHCOUNTS® Problem of the Week Archive

School Bus Math – August 29, 2022

Problems & Solutions

At the first four stops, the number of students that board Mr. Edler's school bus is 4, 6, 12 and 2 students, respectively, and no students exit the bus. After these four stops, the number of students on Mr. Edler's school bus is 50% of its full capacity. How many students does Mr. Edler's bus hold at full capacity?

At the first four stops, a total of 4 + 6 + 12 + 2 = 24 students board the bus. Since this represents 50% of its full capacity, the bus must hold 2 × 24 = ***48*** *students at full capacity.*

After the last stop on Mr. Edler's route, the number of students on the bus is 3/4 of its full capacity. Once Mr. Edler has completed picking up all the students on his route, if no students have exited the bus, how many students could the remaining empty seats accommodate?

From the previous problem, we know that the bus holds 48 students at full capacity. We also know that after the final stop, 1 – (3/4) = 1/4 of the seats remain empty. That means the bus could accommodate another (1/4) × 48 = ***12*** *students.*

There are a total of 8 stops on Mr. Edler's school bus route. How many students are picked up at each of the last four stops if the same number of students boards the bus at each of these four stops, and no students exit the bus?

From the previous problems, we know that Mr. Edler picks up a total of 48 – 12 = 36 students in eight stops. At the first four stops, he picks up 24 students, so the remaining 36 – 24 = 12 students board the bus at the last four stops. Since Mr. Edler picks up the same number of students at each of these stops, he must pick up 12 ÷ 4 = ***3*** *students at each of the last four bus stops.*

MATHCOUNTS® Problem of the Week Archive

School Bus Math – August 29, 2022

Problems

At the first four stops, the number of students that board Mr. Edler's school bus is 4, 6, 12 and 2 students, respectively, and no students exit the bus. After these four stops, the number of students on Mr. Edler's school bus is 50% of its full capacity. How many students does Mr. Edler's bus hold at full capacity?

After the last stop on Mr. Edler's route, the number of students on the bus is 3/4 of its full capacity. Once Mr. Edler has completed picking up all the students on his route, if no students have exited the bus, how many students could the remaining empty seats accommodate?

There are a total of 8 stops on Mr. Edler's school bus route. How many students are picked up at each of the last four stops if the same number of students boards the bus at each of these four stops, and no students exit the bus?