

# MATHCOUNTS<sup>®</sup> Problem of the Week Archive

## ***National Bike Month – May 13, 2024***

### ***Problems***

*May is National Bike Month, so here are a few problems related to bicycles.*

Brenden is riding an old-time bicycle that has a back wheel with a diameter of 1 foot and a front wheel with a radius of 1.5 feet. After traveling 1000 feet, how many more rotations than the front tire has the back tire completed? Express your answer to the nearest whole number.

Jermaine starts riding his bike at a rate of 10 miles per hour. After 5 minutes, Nelson starts riding from the same starting point as Jermaine and along the same route at a rate of 12 miles per hour. If each boy rides at a constant rate, how many minutes will Jermaine ride his bike for before Nelson catches up with him?

At Your Town Bike Shop, handle bar streamers are sold in packs of two and beads for spokes are sold in sets of 10. Georgina purchases 2 packs of handle bar streamers and 3 sets of beads for \$27.85 before tax. Alexis purchases 1 pack of streamers and 4 sets of beads for \$26.30 before tax. If Nana wants to buy 3 packs of streamers and 6 sets of beads, how much will her bill be before tax?