

## MATHCOUNTS 2020–2021 Handbook Poster Solution

**MATHCOUNTS®**

THE EXPLORERS' JEEP HAS TIRES OF  
**DIAMETER 55 CM.**

**HOW MANY ROTATIONS**  
WILL A TIRE MAKE TO CROSS A BRIDGE IN  
**1 MINUTE** TRAVELING  
**48 KM/H?**

EXPRESS YOUR ANSWER TO THE NEAREST WHOLE NUMBER.

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The jeep's speed is 48 km/h, which means that, in 1 minute, it will travel  $48 \div 60 = 0.8$  km, or  $0.8 \times 10^5 = 80,000$  cm. Each tire has a diameter of 55 cm and a circumference of  $55\pi$  cm. So, for every  $55\pi$  cm the jeep travels, each tire makes 1 rotation. Therefore, to travel a distance of 80,000 cm, each tire will make  $80,000 \div 55\pi \approx \mathbf{463}$  rotations.