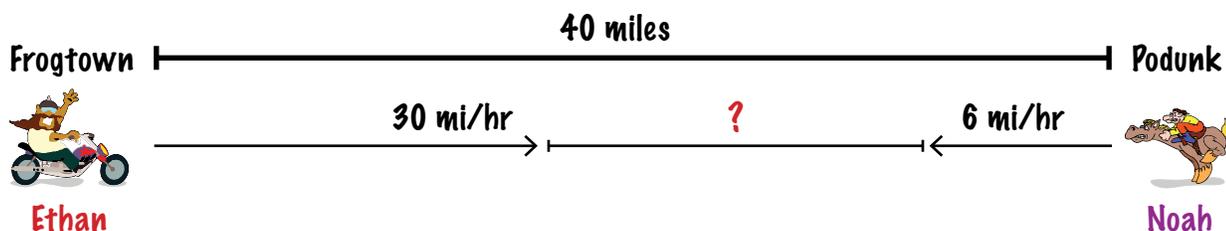


## Speed Challenges

### Practice Problem #5

At <sup>①</sup>high noon, Ethan jumped on his Hogley Favoriteson motorcycle and began the 40 mile journey from Frogtown to Podunk. At the exact same time, Noah mounted his trusty steed, Buttercup, and left Podunk and heads toward Frogtown. If Ethan travels at <sup>②</sup>30 miles per hour and Noah squeezes <sup>③</sup>6 miles per hour out of Buttercup, how far apart will they be at 12:30 p.m.?



① We know they both left at high noon, and it's now 12:30 p.m.

$$12:30 \text{ p.m.} - 12:00 \text{ p.m.} = 30 \text{ minutes or } \frac{1}{2} \text{ hour of travel time.}$$

② Use the information about speed and time to determine the distance they each traveled.

$$D = T \times S$$

③ Ethan:

$$D = \frac{1}{2} \text{ hr} \times \frac{30 \text{ mi}}{1 \text{ hr}} = \frac{30}{2} \text{ mi} = 15 \text{ mi}$$

④ Noah:

$$D = \frac{1}{2} \text{ hr} \times \frac{6 \text{ mi}}{1 \text{ hr}} = \frac{6}{2} \text{ mi} = 3 \text{ mi}$$

⑤ So: Total distance - Ethan's distance - Noah's distance = distance apart

$$40 \text{ mi} - 15 \text{ mi} - 3 \text{ mi} = 22 \text{ mi}$$

Ethan and Noah are 22 miles apart.