

1a. $x = 7/6$

1b. $x = 4$

2. 12.5 miles per hour

3. 6 minutes

4. $3\frac{1}{3}$ hours Suggestion: First figure out what fraction of the car was completed when Bill and Ted were working together

5. 4 hours

Try either setting up a table or guess/check/generalize

Here's g/c/g:

1. Guess: Stuck in traffic for 3 hours so not stuck in traffic for 6 hours

Traffic: 120 miles in 3 hours means $120/3 = 40$ mph

Non-Traffic: 300 miles in 6 hours means $300/6 = 50$ mph

2. Check: Non traffic speed is supposed to be double traffic speed.

But, $50 \neq 2(40)$

3. Generalize: Stuck in traffic for t hours. So, not stuck in traffic for $9 - t$ hours.

Traffic: 120 miles in t hours means $120/t$ mph

Non-Traffic: 300 miles in $9 - t$ hours means $300/9-t$ mph

Since non traffic speed is double traffic speed we have:

$$2\left(\frac{120}{t}\right) = \frac{300}{9-t} \quad \text{Shazam!!!}$$