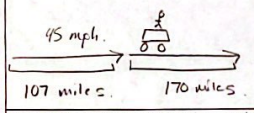
Isaac Abella

Problem Statement:
How long was the 2nd part of Dr. Scott's trip?

Represent the Problem:



Organize Information (Equations, Conversions, Knowns, Unknowns, Assumptions):

average velocity = 22 mph.

T_1 = 45 mph for 107 miles

T_2 = 170 miles

Avg Velocity = $\frac{\Delta x}{\Delta T}$

Calculations: (Box your solutions when completed)

$107/45 =$

$22\ mph = \left(\frac{277\ miles}{2.37 + T_2}\right)$

$22x + 52.14 = 277$
-52.14

$\frac{22x}{22} = \frac{224.86}{22}$ $\quad x = 10.2\ hrs.$

Evaluate Solution:
- ___ My units are consistent and cancel throughout the calculations
- ___ My equations are appropriate for the physical system being evaluated
- ___ My answer is reasonable given the magnitude of the values in the problem.
- ___ My final solution answers the problem statement.
- ___ My final solution is in the appropriate form (vector or scalar)

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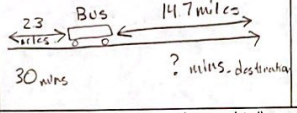
Problem Statement:
How long did Dr. Solomon's bus ride take?

Represent the Problem:



Organize Information (Equations, Conversions, Knowns, Unknowns, Assumptions):

Normal time = 17 miles in 38 mins

1 part of trip = 23 miles in 30 mins

rest of trip goes average speed

average speed = $\frac{\Delta \text{ position}}{\Delta \text{ time}}$

Calculations: (Box your solutions when completed)

$\frac{23\ miles}{30\ mins} = .077$ miles a minute

$\frac{17\ miles}{38\ mins} = .447$ miles a minute · average speed

Solve for the remainder of the trip and add that time to the delay

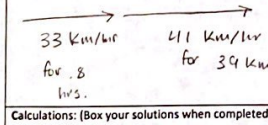
$\left(\frac{23\ miles}{30\ mins}\right) + \left(14.7\ miles / .447_{\text{average time}}\right)$

$14.7 / .447 = 32.85\ mins + 30\ mins = 62.3\ mins.$

Evaluate Solution:
- √ My units are consistent and cancel throughout the calculations
- √ My equations are appropriate for the physical system being evaluated
- √ My answer is reasonable given the magnitude of the values in the problem.
- √ My final solution answers the problem statement.
- √ My final solution is in the appropriate form (vector or scalar)

Problem Statement:
How fast does Peyton have to drive for the next 24 km to avg 25 km?

Represent the Problem:



Organize Information (Equations, Conversions, Knowns, Unknowns, Assumptions):

given — rate — time

33 km/hr for .8 hrs.

41 km/hr for 39 km — distance

Velocity = $\frac{\Delta x}{\Delta y}$

Calculations: (Box your solutions when completed)

distance of leg 1 = $33 \frac{km}{hr} \cdot .8\ hr = 26.4\ km$ ✓

time of leg 2 = $39\ km / 41\ km/hr = .951\ hrs$ ✓

total time = $.8\ hr + .951\ hrs = 1.75\ hrs.$

I know for to average 25 km for the trip

total distance = $26.4 + 39 = 65.4$

for the next 24 km don't know time

$25\ km/hr = \frac{24 + 39 + 26.4}{.8 + .951 + X}$ $\quad 24/1.825$

displacement

$= 13.15\ km/hr$

$89.4/25 = 3.576 - .8 - .951 = 1.825$

Evaluate Solution:
- ___ My units are consistent and cancel throughout the calculations
- ___ My equations are appropriate for the physical system being evaluated
- ___ My answer is reasonable given the magnitude of the values in the problem.
- ___ My final solution answers the problem statement.
- ___ My final solution is in the appropriate form (vector or scalar)