Speed problems #6

(1a)　$d = 70$ miles, $d = 15$ miles　total $d = 85$ miles

$S = 15 \frac{miles}{hour}$, $s = 20 \frac{miles}{hour}$

(1b)　S

(2)　$S = \frac{d}{t}$ ✓

$t = \frac{d}{S}$

$t = \frac{70}{15} = 4.67$ hours

(3)　$S = \frac{85 \text{ miles}}{5.42 \text{ hours}}$

$t = \frac{15}{20} = +.75$ hours

total $t = \underline{5.42}$ hours

(4)　$S = \frac{85}{5.42}$

$\boxed{S = 15.7 \frac{miles}{hour}}$

(5)　$S = \frac{d}{t}$

$t \cdot 15.7 = \frac{85}{\cancel{t}} \cdot \cancel{t}$

$\frac{t \cdot \cancel{15.7}}{\cancel{15.7}} = \frac{85}{15.7}$

$t = 5.41$ ✓

Velocity Problems 1:

- displacement, <u>not</u> distance
- <u>direction</u> (make up if there is not a direction in the problem)
- Velocity = $\dfrac{\text{displacement}}{\text{time}}$

$$v = \dfrac{d}{t}$$

① ⓵ₐ $d = 11m, \; t = 63s$

     ⓵ᵦ v

② $v = \dfrac{d}{t}$

③ $v = \dfrac{11m}{63s}$

④ $v = \dfrac{11}{63}$

$$\boxed{v = .17 \; \frac{m}{s} \; North}$$

A moose goes 11 meters in a straight line. It takes 63 seconds. Velocity?

⑤ $v = \dfrac{d}{t}$

$t \cdot .17 = \dfrac{11}{\cancel{t}} \cdot \cancel{t}$

$\dfrac{t \cdot .17}{.17} = \dfrac{11}{.17}$

$t = 64.7 \checkmark$