

Manfred the wooly mammoth is sprinting to Portland. For the first 70 miles, he sprints at 15 miles per hour. For the last 15 miles, he sprints at 20 miles per hour. What was his average speed?

$$\text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{70 + 15}{4.67 + 0.75} =$$

$15.7 \frac{\text{miles}}{\text{hr}}$

how long did it take?

1<sup>st</sup> part:  $S = \frac{d}{t}$  15 mph =  $\frac{70 \text{ miles}}{t}$

4.67 hours

2<sup>nd</sup> part:  $S = \frac{d}{t}$  20 mph =  $\frac{15 \text{ miles}}{t}$

0.75 hours

... 5.  $S = 15.7 \frac{\text{miles}}{\text{hr}}$

## General hints:

- show work (formulas with just variables, substitutions, calculations)
- be neat
- answer
- Include correct units & direction (if necessary)
- Don't rewrite problems
- Don't rely on others
- Use decimals not fractions
- Use your own paper

## THE FIVE STEPS:

1. List & identify all variables that are given
2. Identify the variable you're looking for
3. Find the correct equation ★
4. Substitute & solve
5. Write your answer with units and direction (if needed) ★

IF YOU KNOW ( $v = \frac{d}{t}$ )

If you know (step 1)	You can find (step 2)	Formula	Units
$d, t$	$v$	$v = \frac{d}{t}$	$\frac{m}{s} + \text{direction}$
$v, t$	$d$	$d = v \cdot t$	$m + \text{direction}$
$v, d$	$t$	$t = \frac{d}{v}$	$s$

1. A moose is moosing down a trail. He goes a total of 11 meters in a straight line, and it takes him 63 seconds. What is his velocity?

① 1.  $d = 11 \text{ m}$  ;  $t = 63 \text{ s}$

2.  $v$

3.  $v = \frac{d}{t}$

4.  $v = \frac{11}{63}$

5.  $v = 0.17 \frac{\text{m}}{\text{s}}$  down the trail

## TODAY:

- Look at velocity problems (moose...)
- Redo any question where you missed points
- Use the five steps
- Turn in new revised answers along with original answers