

Position, Displacement and Velocity Worksheet

***Make sure you show all your work. Write answers with appropriate units and direction when needed!**

Name _____

/40

1. Light from the sun reaches the Earth in 8.3 minutes. The velocity of light is 300 000 000 m/s. How far from Earth is the sun? (Hint: convert time in seconds!) (3)

2. You and your friend each drive 50.0 km [N]. You travel at 90.0 km/h [N]. Your friend travels at 95 km/h [N]. How long will your friend be waiting for you at the end of the trip? (Hint: calculate the time it will take each of you to get there first!) (3)

3. Ann is driving down a street at 55 km/h [W]. Suddenly a child runs into the street. If it takes Ann 0.75 seconds to react and apply the brakes, how many meters will she have moved before she begins to slow down? (Hint: convert km/h into m/s first!) (3)

4. Circle any of the following quantities that are velocities. (2)

a. 24 m/s North

b. 10 km/h

c. -100 km/h

d. 75 m/s to the right

5. Fill in the table below by using the velocity formula. Write out each calculation in proper form and round your answers appropriately. (3)

\vec{d}	t	\vec{v}
10.5 m right	4.3 s	25 m/s [E]
164 km [S]	8.2 s	110 km/h [S]

6. Jack takes his dog for a walk. They travel at 3.5 km/h [W] for 0.75 h. What is their displacement? (2)

7. A student travels 6.0 m [E] at 2.0 m/s [E]. How long is the student in motion? (2)

8. Examine the figure below to find each piece of information listed. (7)

a. $\vec{d}_1 =$

b. $\vec{d}_2 =$

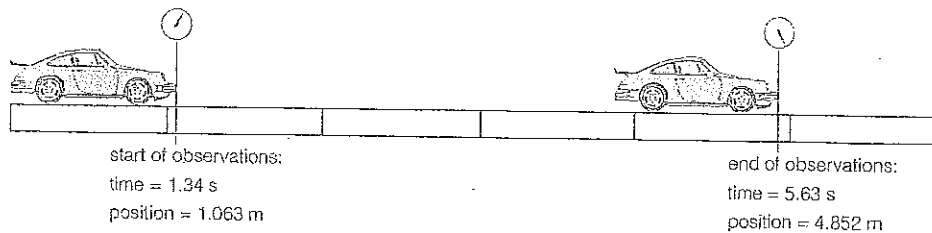
c. $\vec{\Delta d} =$

d. $t_1 =$

e. $t_2 =$

f. $\Delta t =$

g. $\vec{v} =$



9. Fill in the blank boxes in the table below. (9)

t_1	t_2	Δt	\vec{d}_1	\vec{d}_2	$\vec{\Delta d}$	Direction
5.0 s	6.5 s		+17.3 m	+20.0 m		
	8.3 s	2.1 s	+26.9 m		+5.3 m	
0 s		105.4 s		+26.8 m	-15.4 m	

10. If a cyclist in the Tour de France traveled 24.6 km southwest in 2 hours, what would the velocity of the cyclist be? (2)

11. Calculate the velocity of a car that travels 556 kilometers northeast in 3.4 hours. (2)

12. If a projectile flies north 387 meters in 5.8 seconds, what is its velocity? (2)

