SPH4C

SPEED

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Speed is a measure of how fast something is moving. Speed is said to be a ***scalar quantity*** as it does not have a direction associated with it. *Ex*. The cyclist reached a speed of 12.0 m/s during the race.

Speed can be written as a mathematical function involving the quantities ***distance*** and ***time***.

$v = \frac{d}{t}$	v – Speed
	d – Distance
	t – Time

In order to problem solve with a high rate of efficiency you must ***G.U.E.S.S.***

G =

U =

E =

S =

S =

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Ex 1. *Calculate the time required to drive from Windsor to Toronto and back if the distance between Windsor and Toronto is 350 km and you drive an average speed of 95 km/h.*

Ex 2. *Commercial airplanes travel at speeds close to 1000 km/h, how far does a plane travel in 30 seconds?*

Ex 3. *A snail can slime its way about 14.2 m in and hour.*

a) *What is the snail's speed in m/s?*

b) *What is the snail's speed in km/h?*

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HOMEWORK

SPEED PROBLEMS

1. Solve for the missing values in the following table.

Trial	Distance	Time	Speed
1	75.0 m	6.65 s	
2	3050 km		85 km/h
3		15.2 s	12.2 m/s
4	250 m	13.5 s	
5		6.65 h	75 km/h
6	450 m		8.85 m/s

2. Calculate the speed of sound, given that a clap of thunder is heard by an observer 1.5 km away, 4.6 s after the lightning that produced it is seen.

3. How far is the moon from the Earth, given that radio waves traveling at the speed of light (3.0×10^8 m/s) take 1.28 s to reach the moon?

4. How long does it take light from the sun to reach Earth if it must travel 1.5×10^8 km at the speed of light (3.0×10^8 m/s)?

5. In 1997, Thrust SSC, the world's fastest jet-engine car, traveled 604 m at an average speed of 341 m/s.

a. What length of time did this take?

b. Convert 341 m/s into km/h.