Lesson 1: Speed and Velocity

Speed and Velocity

What is meant by the terms:

Speed? is j

Velocity?

is just <u>how fast</u> you are going with <u>no</u> regard to the <u>direction</u>.

Must <u>have the direction</u> specified as well as the speed.

Speed and Velocity

Are these examples of speed or velocity?



So:

Speed and velocity are both measured in the same units and say <u>how fast</u> you are going.

Velocity though gives you the <u>direction</u> too.

Speed and Velocity

You need to be able to calculate the speed of an object. What do you need to know? (think about the units of speed).

How far something has travelled - distance

How long it took to travel that distance - time.

Remember: Speed is measured in mph, km/h, m/s, cm/s

Speed and Velocity

So the formula to work out speed is:

Remember: Speed is measured in mph, km/h, m/s, cm/s

So the answer is in the units:

<u>Distance</u> = Speed Time



Speed and Velocity

So the formulas are:



Keywords: Speed, Velocity, Acceleration,

Speed and Velocity

Lets use the formulas:



A cat walks 20m in 35s. Find:
a. Its speed
b. How long it takes to walk 100m

Answer: 0.57 m/s (remember units)

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Speed and Velocity

Lets use the formulas:



- 1. A cat walks 20m in 35s. Find:
- a. Its speed b. How long it takes to walk 100m

Answer: 175s (remember units)

Speed and Velocity

Lets use the formulas:



To calculate velocity, we use the same formula.

All that we would need to add is the direction that the cat was walking.

Velocity = distance/time

1. If a person is walking at 4 m/s, how far can he travel in 30 seconds?

a) 120 meters b) 7.8 meters c) .08 meters

2. A spaceship can move 100 meters in 2 seconds. What is the ship's velocity?



3. A chicken runs across the street at a speed of 12 m/s. If the road is 36 meters across, how long does it take for the chicken to cross the road?

a) 3 s b) 432 s c) .333 s



A car travels a distance of 500 m in 10 sec. What is the car's speed?

v = s/t



A second car travels a distance of 100 meters in 20 seconds. What is this car's speed?