

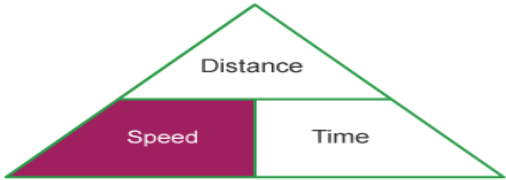
NAME: _____ DATE: _____

STUDY GUIDE FOR MOTION ASSESSMENT

USE YOUR NOTES & TEXT TO COMPLETE

TEST DATE: _____

I. MOTION: Terms to Know

<u>Motion:</u>	When an object changes its position
<u>Frame of Reference:</u>	The background or stationary object that is used to determine if something is moving Ex) the sun
<u>Velocity:</u>	<p>The speed and direction of a moving object</p> <p>An object like to Ferris Wheel is moving in a circular path because it is changing its velocity</p> <p><u>Velocity</u>-(1) change in direction (2) speeding up-acceleration (3) negative acceleration/deceleration Therefore, velocity "could" have a negative #.</p>
<u>Acceleration:</u>	<p>The rate of change in velocity</p> <p>Change in Velocity= $\frac{\text{Final Velocity}-\text{Initial (starting) Velocity}}{\text{Time}} \text{ OR } \frac{(V_f-V_i)}{\text{Time}}$ </p>
<u>Deceleration:</u>	Negative acceleration
<u>Speed:</u>	<p>The rate at which an object moves over a certain distance in a certain amount of time. The formula for calculating speed is time/distance or</p> <div style="text-align: center;">  $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$ </div> <p>time divided by distance</p> <p><u>Speed</u>-Can never be negative # because you can't drive less than 0/Zero MPH.</p>
<u>Resultant Velocity</u>	<p><u>Resultant Velocity</u></p> <ul style="list-style-type: none"> • <u>SAME</u> DIRECTION: + add the two velocities together. • <u>DIFFERENT</u> DIRECTION: - subtract the two velocities.

Draw a horizontal line:

Draw a vertical line:

II. CALCULATING SPEED: Write the Formula, Plug in #'s and Label your Answer

Calculating the speed of a cheetah that runs 140 meters in 5 seconds. Write formula, plug in the numbers and label your answer.

If Noah throws a football 50 meters in 3 seconds, what is the speed of the football?
Write formula, plug in the numbers and label your answer.

III. CALCULATING DISTANCE: Write the Formula, Plug in #'s and Label your Answer

How far did Kate travel if it took 5 hours for her to go at a speed of 80 km per hour?

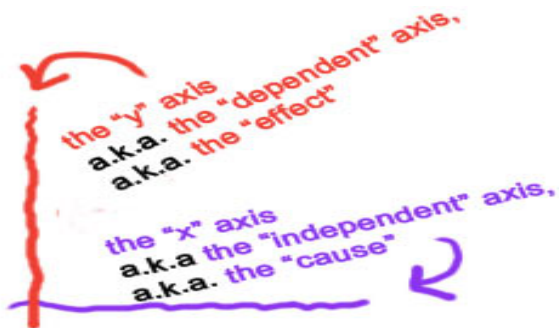
Traveling at a speed of 105 km/h, how far does a bus move in 23 hours?

IV: CALCULATING ACCELERATION: Write the Formula, Plug in the #'s and Label your Answer

<u>Vi</u>	<u>Vf</u>	<u>Time</u>	<u>Acceleration</u>
0 km/hr	24 km/hr	3 s	

Graphs-What Kind of Graph? Look at the Labels:

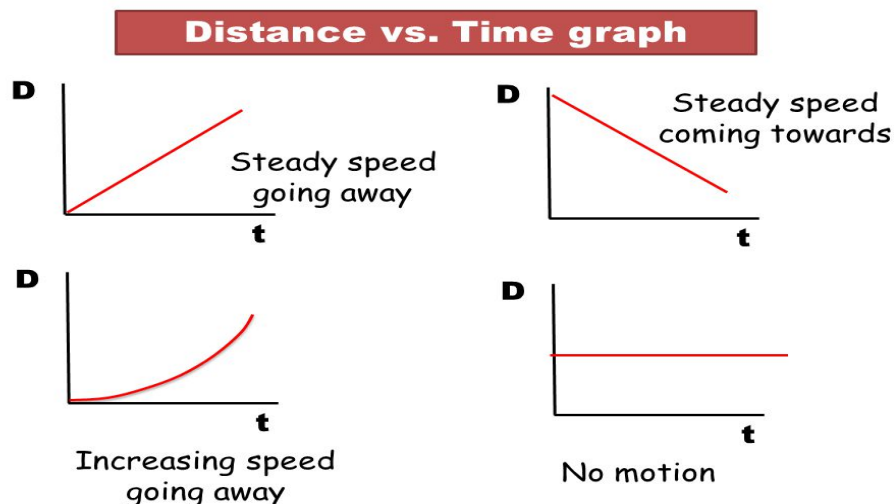
Distance vs. Time OR Velocity (Speed) vs. Time? Is it a "time" or "speed" graph? Make sure you know the difference.



III. SPEED (Distance vs. Time) Graphs:

What does this show you?

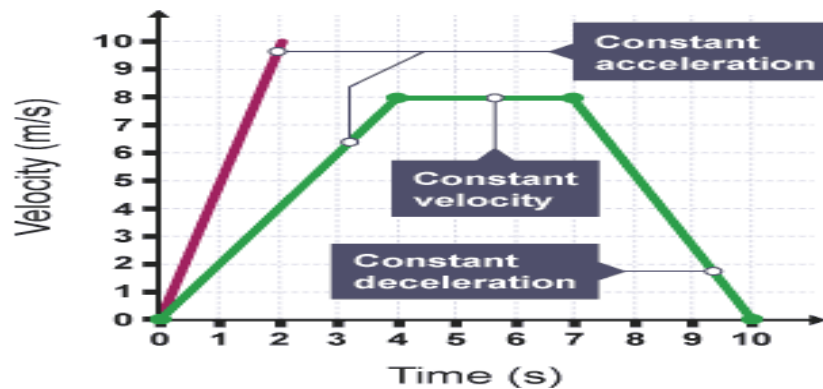
The Distance vs. Time graph shows how the position of an object changes over time. These graphs have two variables (labels) distance (D) (y axis) and time (T) (x axis), which measure speed. $\text{Speed} = \text{Distance} \div \text{Time}$ In other words, this graph measures "speed".



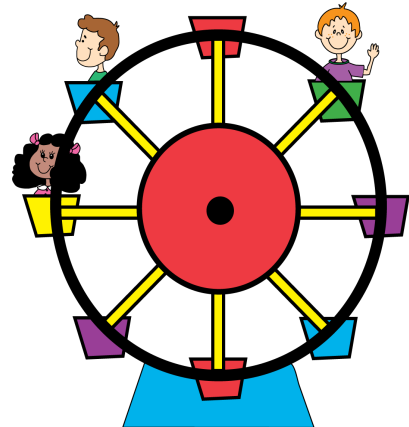
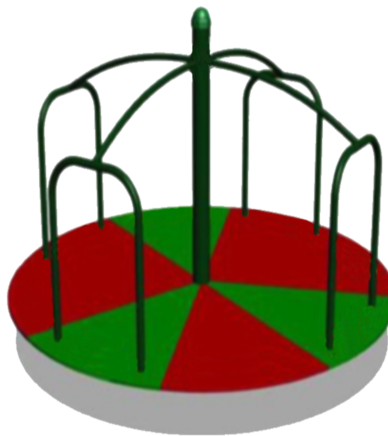
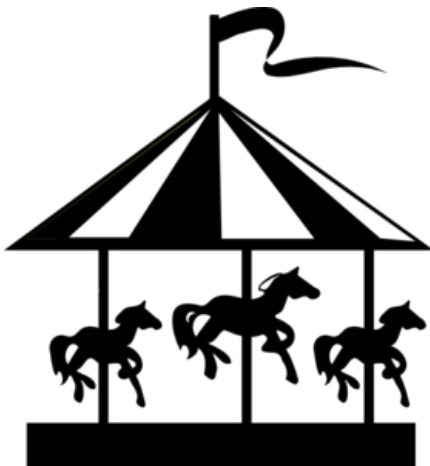
Graph D above shows acceleration on a Speed Graph. So, how would a Speed graph show decreasing speed (negative acceleration)?

IV. ACCELERATION (Velocity or Speed vs. Time) Graphs:

What does this show you? The Velocity (speed in any given direction) vs. Time graph shows how fast an object moves in any given direction. In other words, this graph measures "acceleration".



VII. Circular Motion: Are these examples of acceleration?



Yes, because you are "continuously" _____ direction.
Therefore, circular motion is always changing direction.

Remember how to convert to various units in the metric system:

kilo, hecto, deca, UNIT, deci, centi, milli

King Hector Died Unexpectedly Drinking Chocolate Milk

practice a few:

23.4 cm = _____ m

5 kg = _____ g

45.1 dam = _____ cm