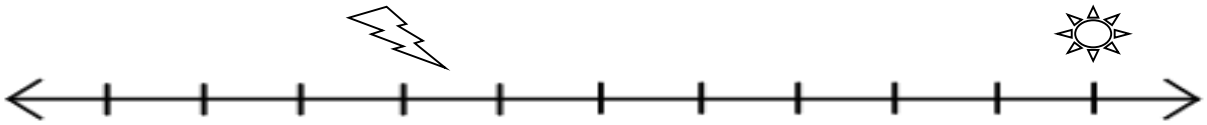
Motion Review Guide

Directions: The following are the types of questions you will have to answer / problems you will have to solve on your Summative Assessment ***Next Block***.

Make sure to SHOW YOUR WORK and **use complete sentences to EXPLAIN YOUR ANSWERS**.

Each mark is a meter in the diagram below.



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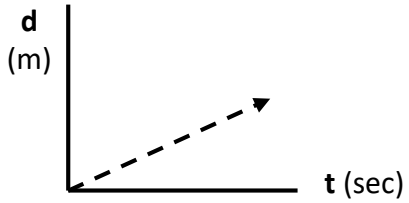
1. Draw a "☺" at position +2 m.
2. What is the position of the "⚡"? _____
3. What is the position of the "☀"? _____
4. Draw an "X" at position –5 m.
5. If I said to draw a K to the *right* of the *lightning bolt*, could you do it? **Why or why not?**

Use the graph below to answer #6 – 9.



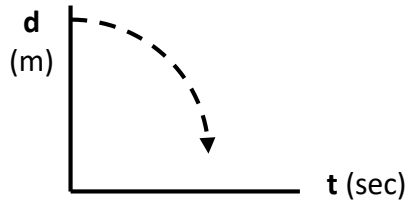
6. Is the object slowing down, speeding up or traveling at a constant speed? EXPLAIN.

7. Does the object have a *positive* or *negative velocity*? **How do you know?**

8. Is the object *in 'Equilibrium'*? **If so, what type and why? If NOT, why?** EXPLAIN.

9. Draw an object that is traveling with a *negative velocity* **that is *slowing down*** <u>in the graph for #6</u> on the previous page.

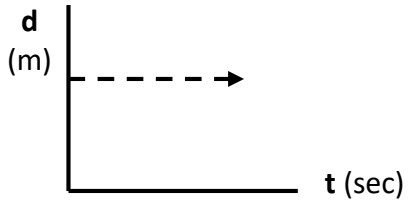
Use the graph below to answer #10 – 11.



10. Is the object slowing down, speeding up or traveling at a constant speed? EXPLAIN.

11. Is the object *in 'Equilibrium'*? **If so, what type <u>and</u> why? If NOT, why?** EXPLAIN.

Use the graph below to answer #12 – 14.



12. What is the object doing? EXPLAIN.

13. Is the object *in 'Equilibrium'*? **If so, what type <u>and</u> why? If NOT, why?** EXPLAIN.

14. Draw an object that is traveling with a *positive velocity* **that is *speeding up*** <u>in the graph for #12</u>.

Solve the following problems. Make sure to SHOW YOUR WORK i.e. List out variables, convert, write out the formula and include a unit on your final answer.

15. A child on a tricycle pedals at a constant 3 **m**/s. If the sidewalk in front of their house is 99 **feet;**

a. Did this problem give you the *speed* or *velocity* of the child? EXPLAIN.

b. How long will it take the child to pedal the entire distance? (**3.3 ft = 1 m**)

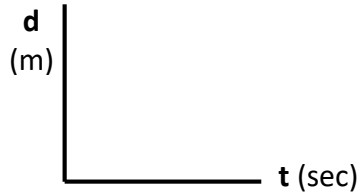
16. A police car is heading **north** down the highway chasing a criminal. A helicopter overhead notices the police car travels a distance of 150 m in about 4 seconds. What was the ***velocity*** of the police car?

17. A Frisbee is thrown at 12 m/s **east**.

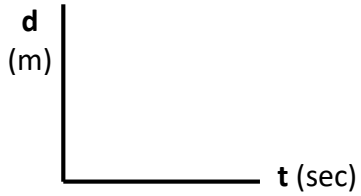
a. *How far* will the Frisbee have traveled in 8 seconds?

b. Sketch graphs for what it would look like for the following scenarios:

The Frisbee traveled with a *constant velocity*

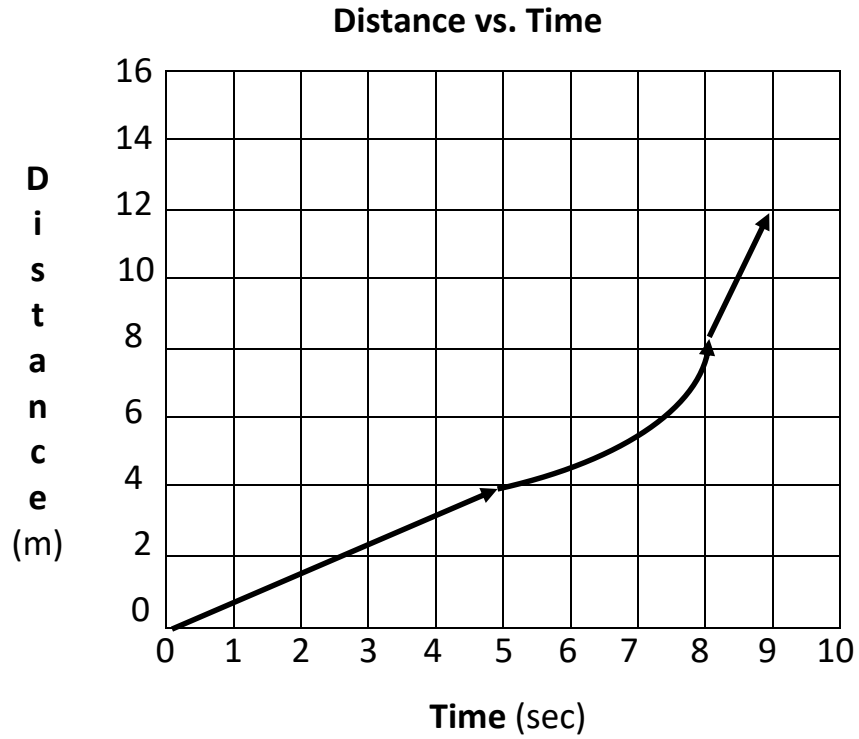


The Frisbee *slows down* because of a wind blowing west



The Frisbee *speeds up* because of a wind blowing east

Use the graph below of a jogger running through a park to answer # 18– 21.



18. Using the equation for slope $\frac{y_2-y_1}{x_2-x_1}$, find the speed of the jogger over the first 5 seconds.

19. What is the jogger doing from 5 – 8 seconds? How do you know?

20. What is the speed of the jogger from 8 – 9 seconds?

21. If the jogger started to slow down, what would the graph start to do?