

Name: _____
First Last

Period: _____

Objective 11 – Assignment List

Functions: *calculate the rate of change for linear functions and identify functions in various forms.*

Tuesday

In Class: *Time Trials*

Watch: *Time Trial Video Notes*

Wednesday

In Class: *RANGER WALKS*

Watch: *RANGER Velocity Notes*

Thursday

In Class: *RANGER Velocity Practice*

At Home: *Graphic Stories with The Moving Man*

Friday

In Class: *Unit 3 TEST*

Monday

In Class: *RANGER GRAPH FUNCTIONS*

Watch: *Introduction to Functions*

Tuesday

In Class: *Function Practice*

Wednesday **In Class:** *Obj. 11 QUIZ*

Parent Signature: _____

Time Trials

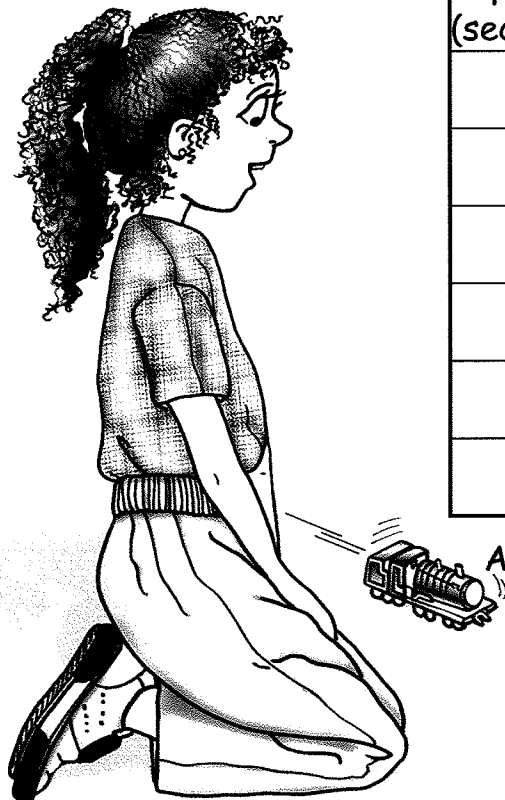


First Vehicle

Time (seconds)	Distance (cm)	Change in Distance	Ratio	
			$\frac{\text{Distance}}{\text{Time}}$	Decimal Equivalent
0				
1				
2				
3				
4				
5				
Average Change				

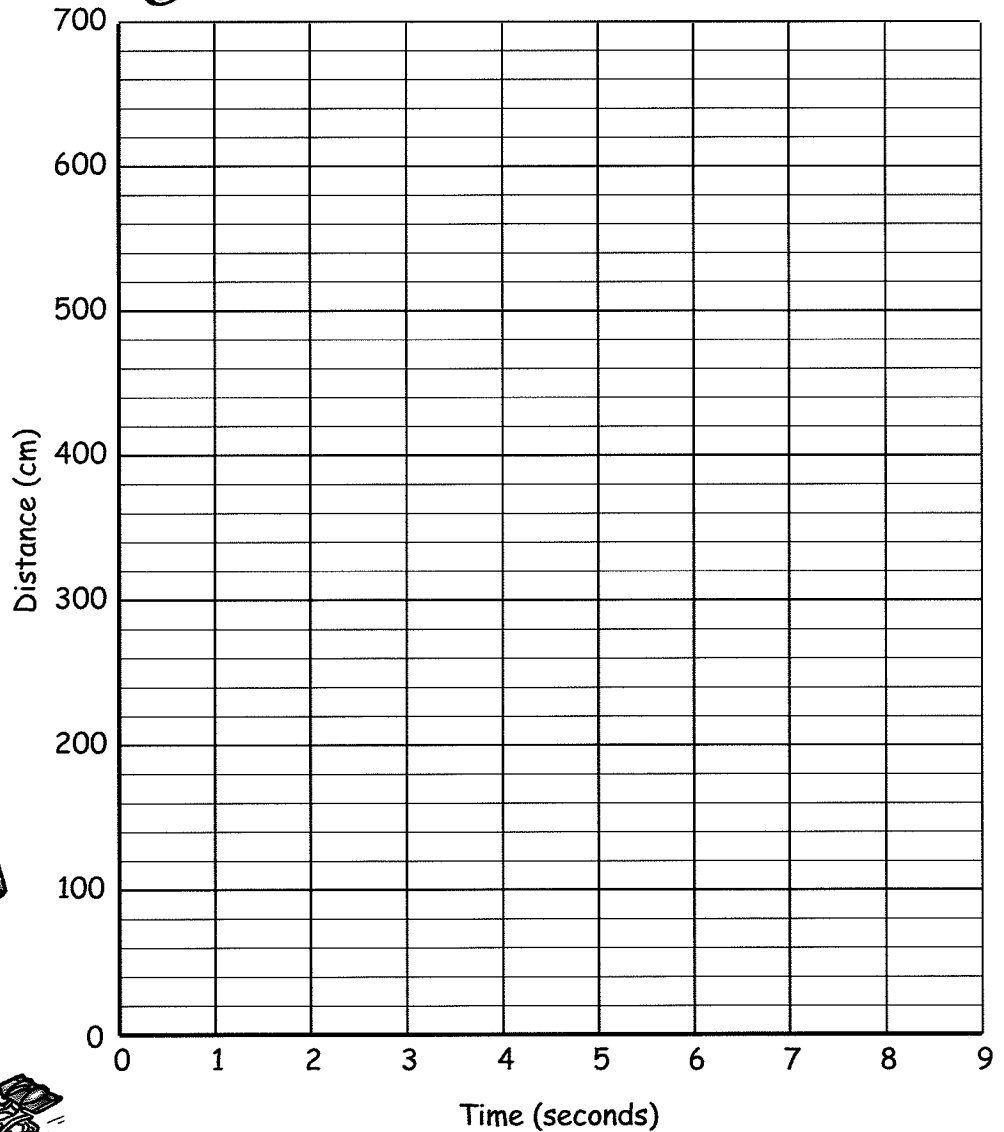
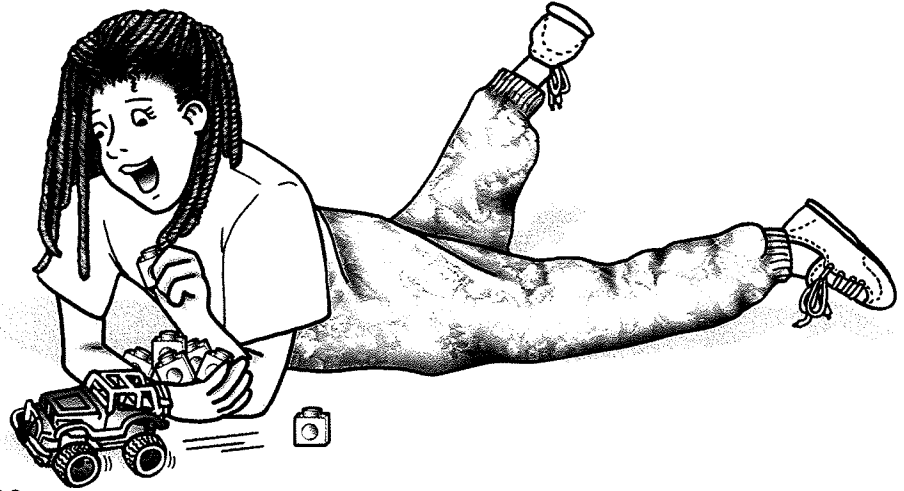
Second Vehicle

Time (seconds)	Distance (cm)	Change in Distance	Ratio	
			$\frac{\text{Distance}}{\text{Time}}$	Decimal Equivalent
0				
1				
2				
3				
4				
5				
Average Change				



Time Trials

Make a broken line on the graph for each set of data. Make each line a different color.



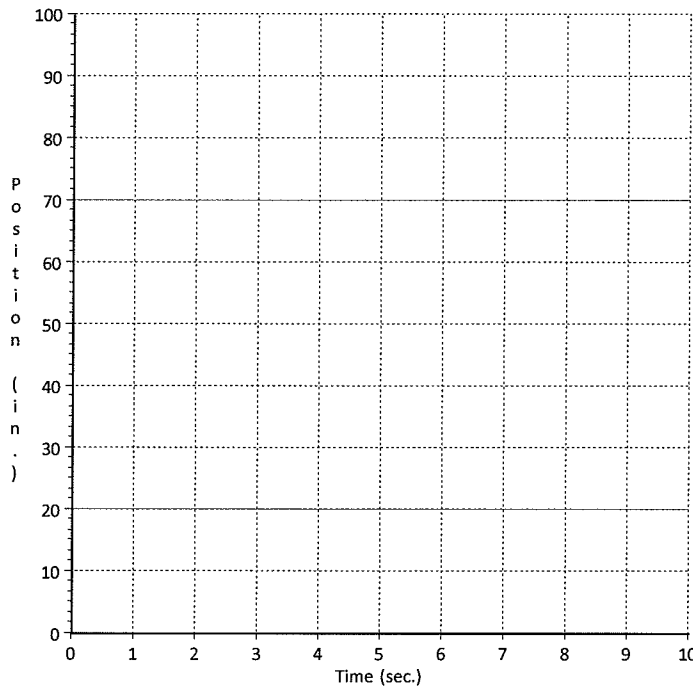
TIME TRIALS VIDEO NOTES

1. Graph the data for each car.

Green

(time, position)

- (3, 18)
- (4, 24)
- (6, 36)
- (7, 42)



Red Car

(time, position)

- (2, 18)
- (5, 45)
- (6, 54)
- (10, 90)

2. Where did both cars start the race (sec.=0)?

3. How can you tell by looking at the graph which car is faster?

4. Use the graph to predict how far the green car will go in 10 seconds.

5. Use the graph to predict how far the red car will go in 8 seconds.

6. How far does the green car go?

7. How far does the red car go?

How many seconds does it take to go this distance?

How many seconds does it take to go this distance?

What is the green car's speed? (Distance/Time)

What is the red car's speed? (Distance/Time)

8. Use the speed of green car to determine how far it will go in 15 seconds.

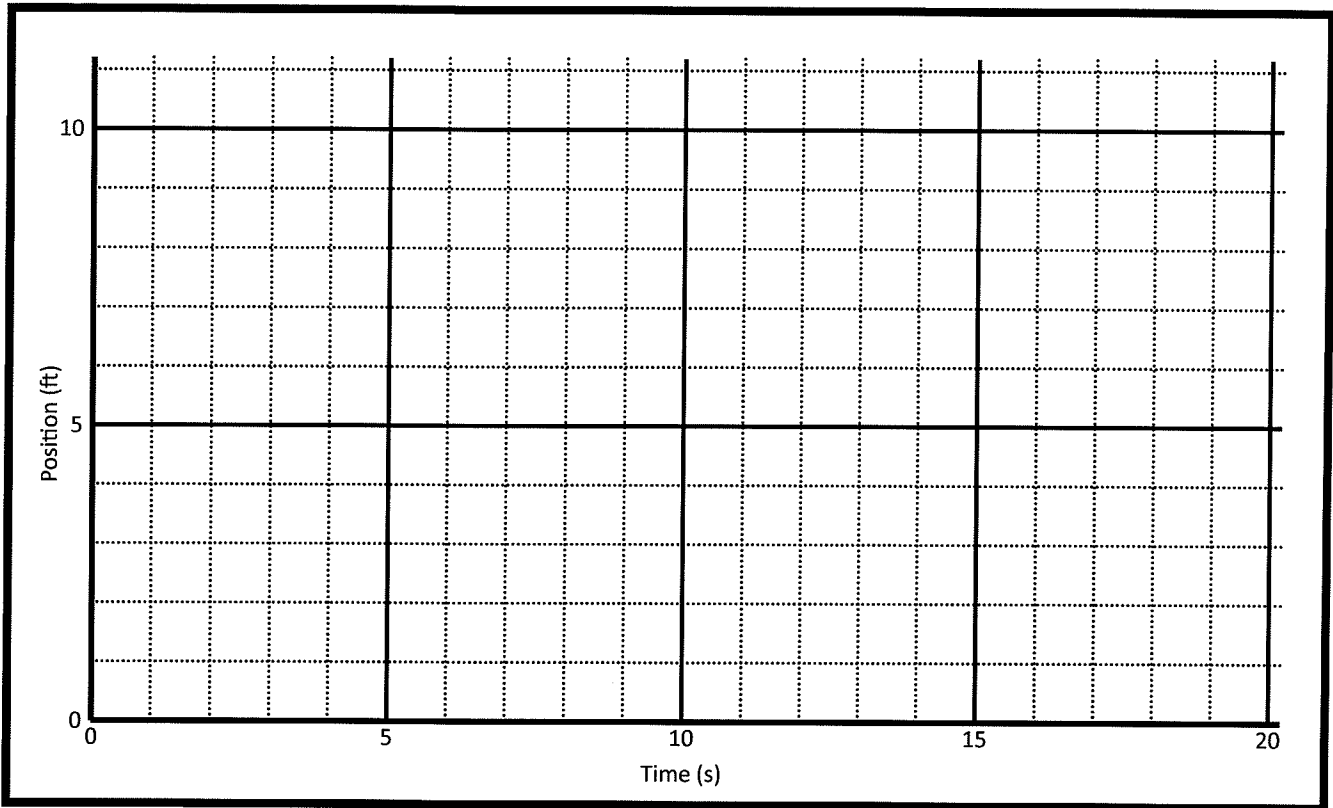
9. Use the speed of red car to determine how far it will go in 12 seconds.

10. Write an equation for each car that tells the Distance(D) of the car at a given time (t) in seconds

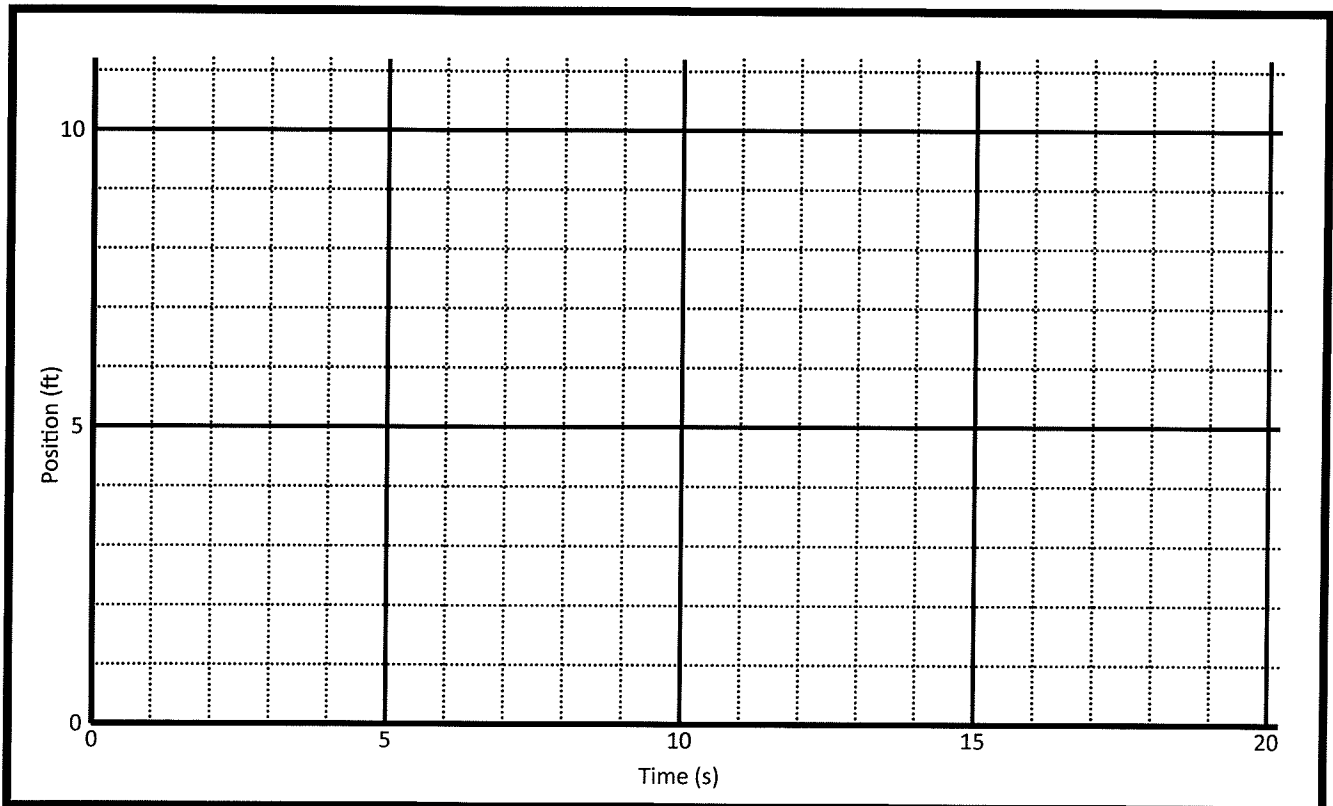
10. Use your equation to determine how long it will take each car to travel 100 inches?

RANGER WALKS

- How can you look at the graph and know which direction the walker is going?



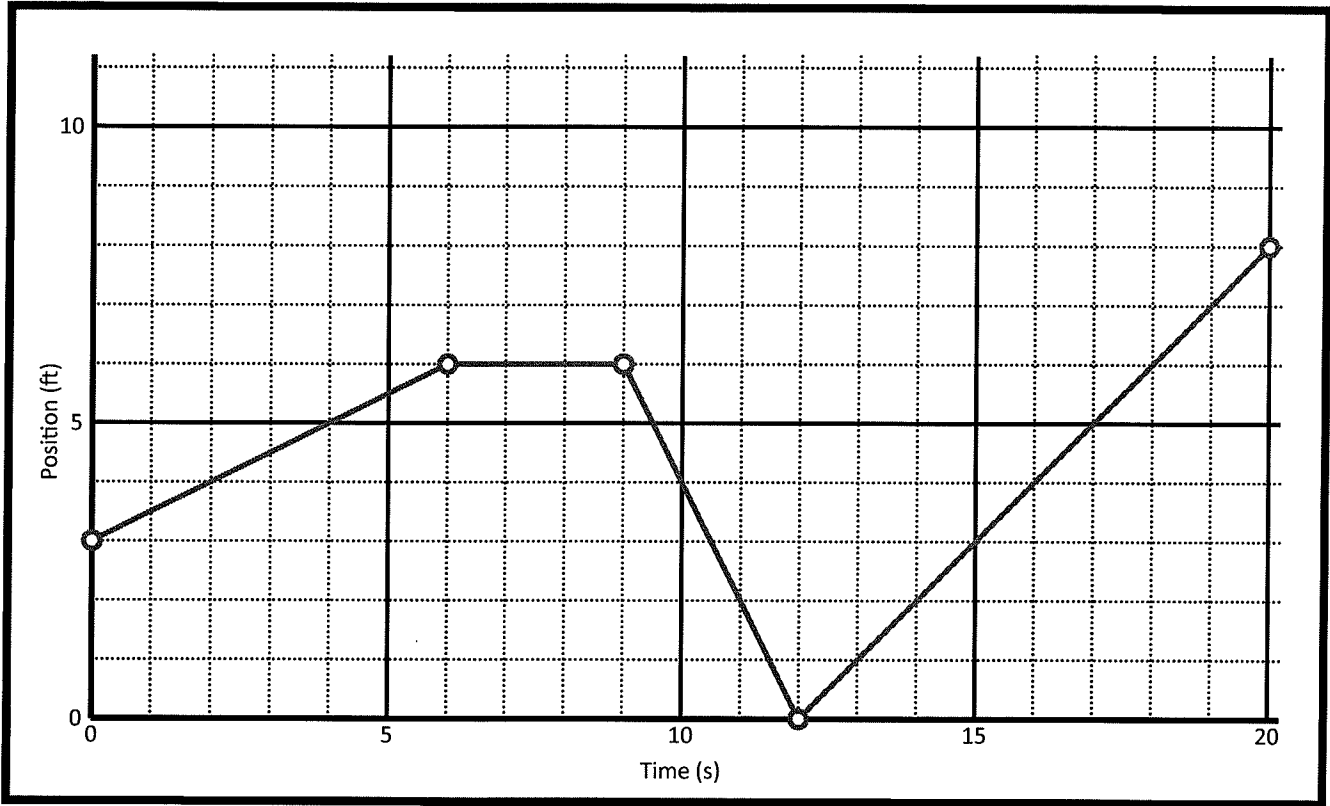
- How can you look at the graph and tell if the walker is moving faster, slower, or stopped?



- How can you use the data on the graph to tell the velocity the walker is moving for a section?

RANGER Velocity Notes

- How do you calculate velocity (speed and direction) from data on a graph?



END: (,)
- START: (,)
<hr style="width: 80%; margin: auto;"/>
CHANGE: (,)

$$V_{\text{velocity}} = \frac{\Delta D_{\text{istance}}}{\Delta T_{\text{ime}}} = \text{_____} =$$

END: (,)
- START: (,)
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CHANGE: (,)

$$V_{\text{velocity}} = \frac{\Delta D_{\text{istance}}}{\Delta T_{\text{ime}}} = \text{_____} =$$

END: (,)
- START: (,)
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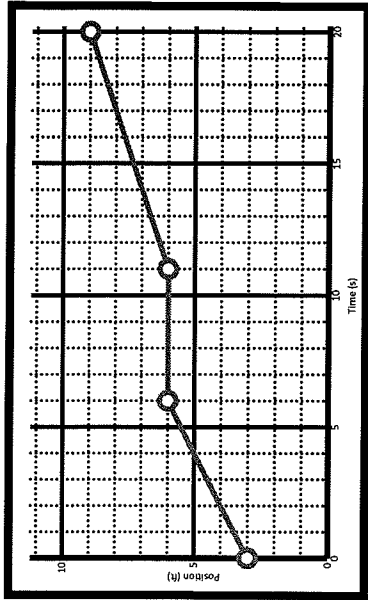
$$V_{\text{velocity}} = \frac{\Delta D_{\text{istance}}}{\Delta T_{\text{ime}}} = \text{_____} =$$

END: (,)
- START: (,)
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CHANGE: (,)

$$V_{\text{velocity}} = \frac{\Delta D_{\text{istance}}}{\Delta T_{\text{ime}}} = \text{_____} =$$

RANGER Velocity Practice

- Label each segment's direction and relative speed (fastest, medium, slowest) to the other segments.
- Calculate and record the velocity of each segment and compare it to you original prediction.



BEGINNING

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

MIDDLE

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

FINISH

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

1.

BEGINNING

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

MIDDLE

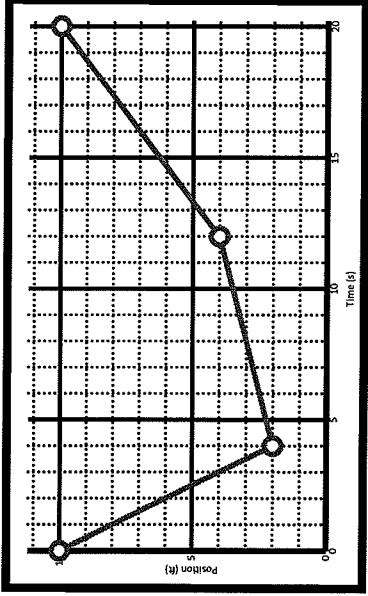
END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

FINISH

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$



2.

BEGINNING

END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

MIDDLE

END:	(,)
- START:	(,)
CHANGE:	(,)

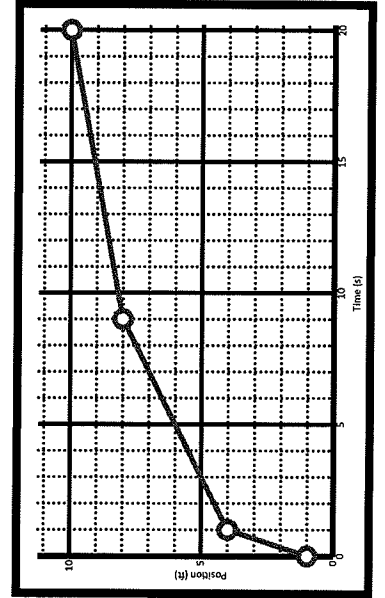
$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

FINISH

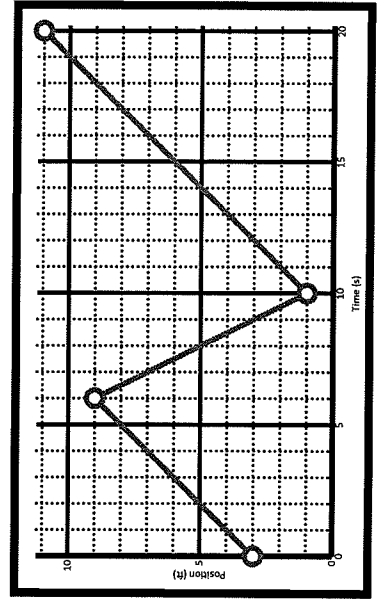
END:	(,)
- START:	(,)
CHANGE:	(,)

$V_{\text{velocity}} = \frac{\Delta D_{\text{distance}}}{\Delta T_{\text{time}}} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

3.

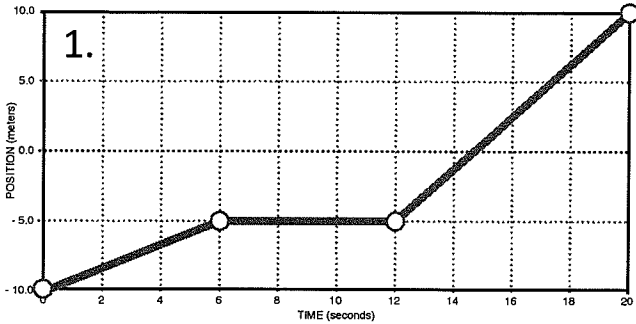


4.



Graphic Stories with *The Moving Man*

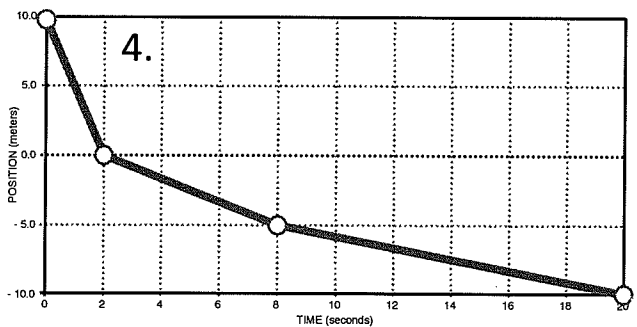
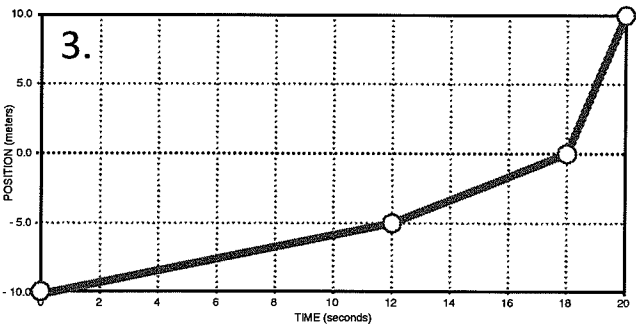
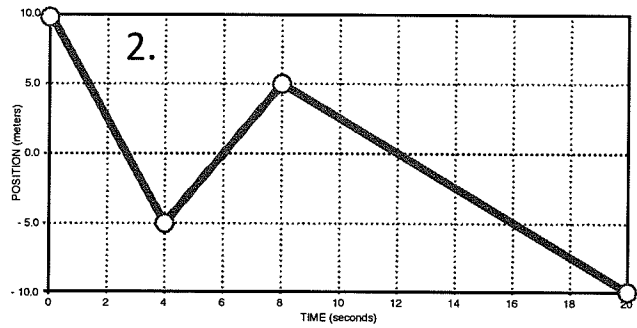
Click on **Run Now!** to play *The Moving Man* at <http://phet.colorado.edu/en/simulation/moving-man>. Choose the **Charts** tab and click the red minus in the right corner of the Velocity and Acceleration graphs. Move the man to make the graphs below. You will need to use the play, pause, and clear buttons. When you have made the graph, write a story about how the man moved. Just fill in the blanks on the first one to get you started.



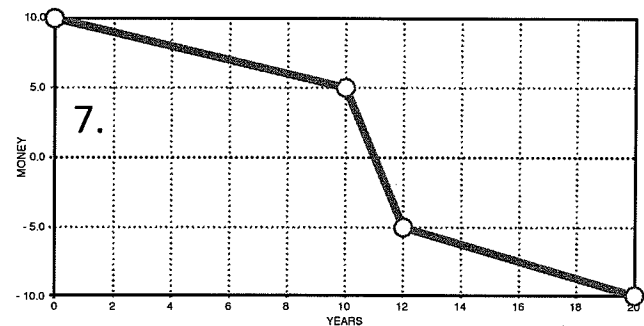
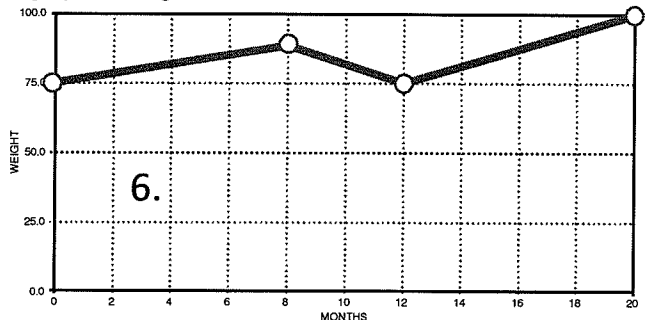
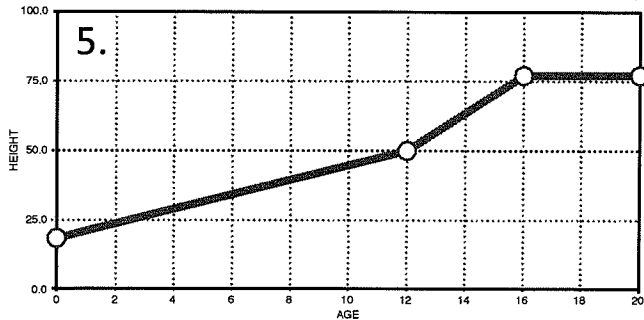
Starting at the man walks m in seconds.

Then walks m in seconds.

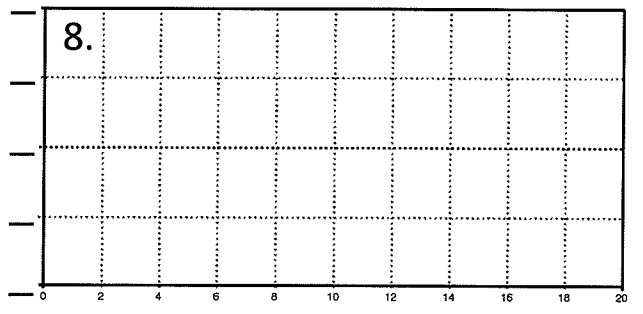
He finishes by walking m in seconds.



Get the walking man to draw each of the graphs below. The scales have been changed so the graph isn't about the man but it does reflect how he walks. Write a story about what each graph is telling by referring to the scales.



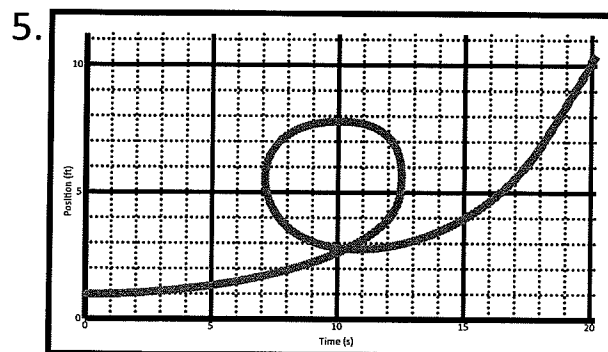
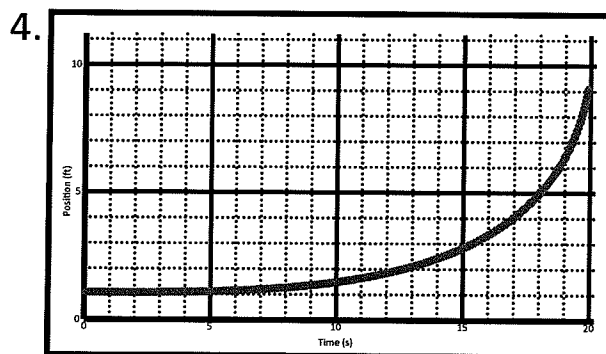
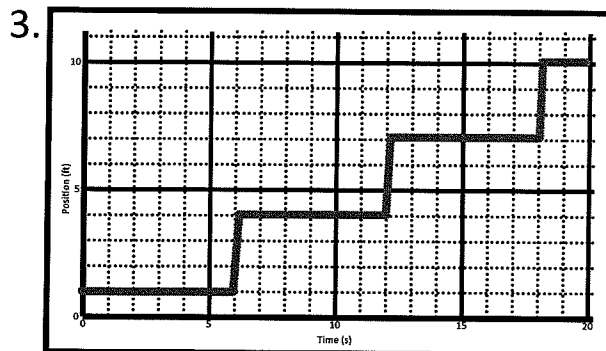
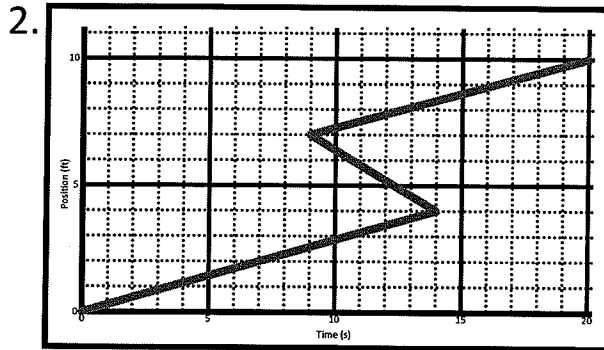
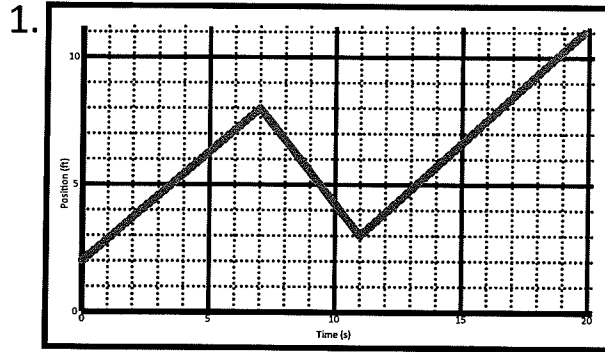
Make a three-segment graph that tells a story. Include a scale that makes sense. Then write the story.



RANGER GRAPH FUNCTIONS

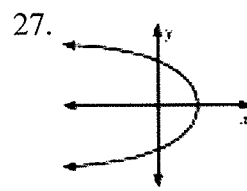
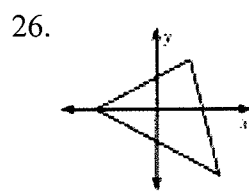
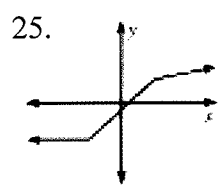
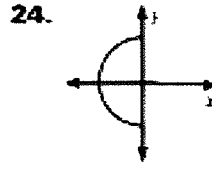
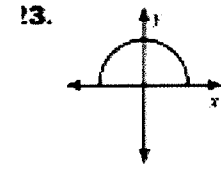
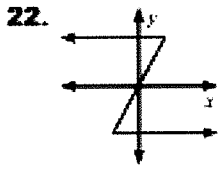
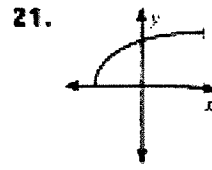
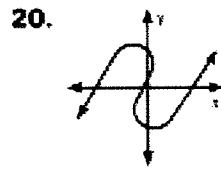
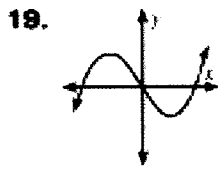
In this column explain how your group plans to "walk" this graph. If you think it is impossible explain.

In this column explain how a group was able to walk the graph and if they had difficulty what caused it.

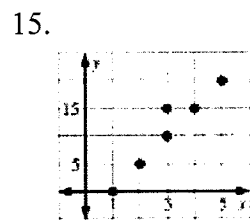
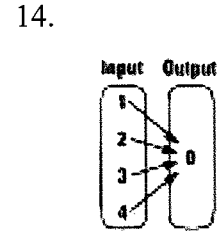
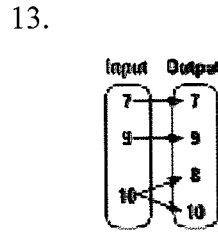
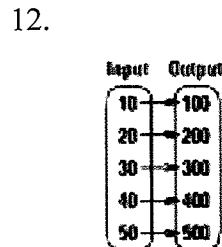
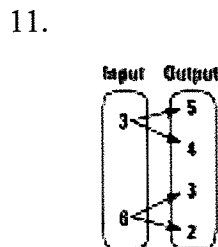


Function Practice Homework

Explain why each graph represents a function or why not.



Explain how you know each is or is not a function. If it is a function list the domain and range.



16.

Input	Output
0	2
1	4
2	6
3	8

17.

Input	Output
0	1
2	2
4	3
5	4

18.

Input	Output
1	1
3	2
5	3
7	1