**DISTANCE VS TIME – Graphing and Calculating Average Speed**

NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DATE \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Scalar examples involving Uniform Motion**

1. A remote control powered car travels along a straight track at a constant speed of 1.5km every minute.

1. Fill in a data table for the first 5 minutes and draw/label a distance vs. time graph.



|  |  |
| --- | --- |
| **Time****(min)** | **Distance****(km)** |
| 0 | 0 |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

distance (km)

1. Calculate the slope of the line

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time (min)

1. What is the relationship between the slope of the line of the graph and the speed of the car?
2. The remote control car travels along a straight track at a constant speed of 2km every minute for the first 5 minutes and then suddenly stops for 3 minute.

a) Fill in a data table for the first 8 minutes and draw/label a distance vs time graph.

|  |  |
| --- | --- |
| **Time****(min)** | **Distance****(km)** |
| 0 | 0 |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |



distance (km)

time (min)

b) What is the speed during the first 5 minute? Is this the same as slope?

c) What is the speed of the car during the 5-8 minute?

**Average Speed**

When you travel on a trip you might \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ several times for things like: fuel, food and bathroom breaks. Your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is also likely changing as you go up hills, around \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and through towns. At any given \_\_\_\_\_\_\_\_\_\_\_\_\_\_ you can measure your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ speed. But, all these changes prevent you from measuring a constant uniform speed. However you can calculate an average speed:

 Where  is the total change in distance and  is the total change in time

1. The remote control car travels along a straight track at a constant speed of 1 km for every minute for 5 minutes and then suddenly stops for 3 minutes and after that travels 1 more min at 2.5km per minute. Fill in a data table for the first 9 minutes and draw/label a distance vs time graph.

|  |  |
| --- | --- |
| **Time****(min)** | **Distance****(km)** |
| 0 | 0 |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |

distance (km)

time (min)

1. What is the total change in distance? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the total change in time? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What is the average speed of the RC car? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_