Sue and Josie went to the movies on Saturday afternoon. Josie’s mom drove them the 5 kilometers to the show. The ride took 10 minutes.

The movie, The Lizard Queen, lasted 1 hour and 20 minutes. The girls then jogged home. It took them 40 minutes.

<table>
<thead>
<tr>
<th>Leg</th>
<th>time interval during leg ( t ) (min)</th>
<th>displacement during leg ( \Delta x ) (km)</th>
<th>position at end of leg ( x ) (km)</th>
<th>total time elapsed ( t ) (min)</th>
<th>total distance traveled ( d ) (km)</th>
</tr>
</thead>
<tbody>
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a. Make a position graph that represents the girls’ outing.

**title:** ____________________________
Complex Motion
Show Time (B)

b. Make a distance graph that represents the girls' outing.

title:____________________

<table>
<thead>
<tr>
<th>time t (min.)</th>
<th>distance (km)</th>
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<tbody>
<tr>
<td>0</td>
<td>2</td>
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<td>20</td>
<td>4</td>
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<td>40</td>
<td>6</td>
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<td>60</td>
<td>8</td>
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<td>80</td>
<td>10</td>
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<tr>
<td>100</td>
<td></td>
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<tr>
<td>120</td>
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c. What was the average speed for leg 1 of the trip? Show your math.

Formula: \( v = \frac{d}{t} \)
Plug: 
Solve:


d. What was the average speed for leg 2 of the trip? Show your math.

Formula: \( v = \frac{d}{t} \)
Plug: 
Solve:


e. What was the average speed for the entire trip? Show your math.

Formula: \( v = \frac{d}{t} \)
Plug: 
Solve:
It took Bob 10 minutes to ride his skateboard 2 kilometers down the hill to Richie’s house.

They played Minecraft for 20 minutes.

It took Bob 20 minutes to walk back home up the hill.

Make a data table and two graphs to show Bob’s movement.

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<th>position at end of leg ( x ) (km)</th>
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**Distance Graph**

**Position Graph**
Bob’s Afternoon (B)

Answer the following questions. Show all work!

1. What was Bob’s speed going to Richie’s house?
   \[ v = \underline{\quad} \quad d = \underline{\quad} \quad t = \underline{\quad} \]
   Formula:
   Plug:
   Solve:

2. What was Bob’s speed coming home from Richie’s house?
   \[ v = \underline{\quad} \quad d = \underline{\quad} \quad t = \underline{\quad} \]
   Formula:
   Plug:
   Solve:

3. What was Bob’s average speed for the whole outing?
   \[ v = \underline{\quad} \quad d = \underline{\quad} \quad t = \underline{\quad} \]
   Formula:
   Plug:
   Solve:

4. What was Bob’s average speed while he was on the move?
   \[ v = \underline{\quad} \quad d = \underline{\quad} \quad t = \underline{\quad} \]
   Formula:
   Plug:
   Solve: