Displacement & Velocity – Answer Key

A minivan travels along a straight road. It initially starts moving toward the east. Below is the position-time graph of the minivan. Use the information in the graph to answer the questions.

1. Does the minivan move to the east? If so, during which time interval(s)?

2. Does the minivan move to the west? If so, during which time interval(s)?

3. Is the minivan’s speed between $t_1$ and $t_2$ greater than, less than, or equal to its speed between $t_2$ and $t_3$?

4. Is the minivan’s speed between $t_4$ and $t_5$ greater than, less than, or equal to its speed between $t_6$ and $t_7$?

5. Does the minivan ever stop completely? If so, at which time(s)?

6. Does the minivan ever move with a constant velocity? If so, at which time(s)?

7. What is the total displacement of the minivan during the trip?
1. Yes, from $t_1$ to $t_4$ and from $t_6$ to $t_7$.

2. Yes, from $t_4$ to $t_5$.

3. greater than

4. greater than

5. Yes, from 0 to $t_4$ and from $t_5$ to $t_6$.

6. Yes, from $t_1$ to $t_2$, from $t_2$ to $t_3$, from $t_4$ to $t_5$, and from $t_6$ to $t_7$.

7. +5.0 m (or 5.0 m to the west of where it started)