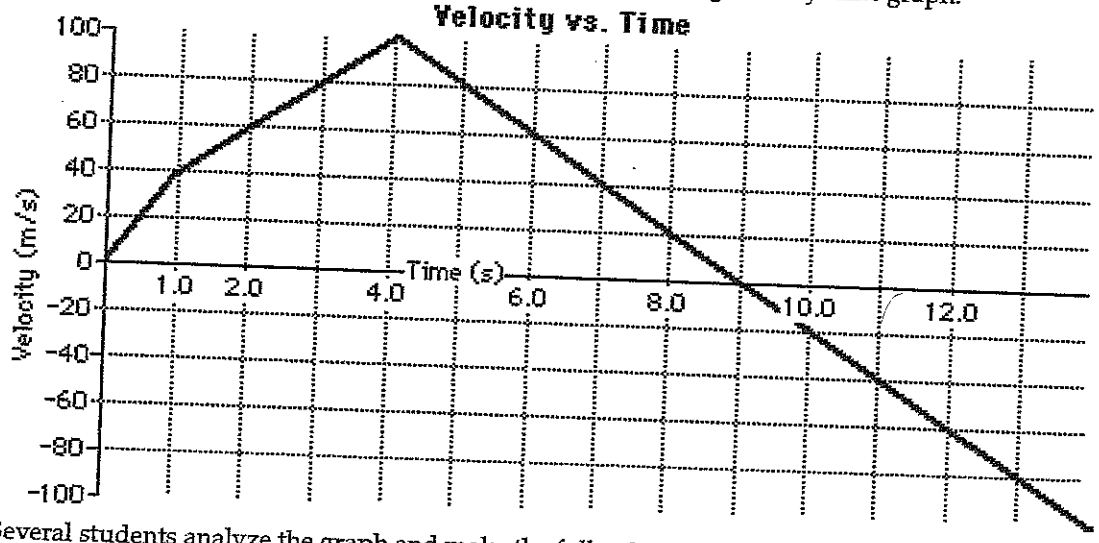
Name: _____

Interpreting Velocity-Time Graphs

The motion of a two-stage rocket is portrayed by the following velocity-time graph.



Several students analyze the graph and make the following statements. Indicate whether the statements are correct or incorrect. Justify your answers by referring to specific features about the graph.

Student Statement	Correct? Yes or No
1. After 4 seconds, the rocket is moving in the negative direction (i.e., down). Justification: Rocket has +V due to being above the 0 vel Value, we have - acc Not -Vel	No
2. The rocket is traveling with a greater speed during the time interval from 0 to 1 second than the time interval from 1 to 4 seconds. Justification: 0-1 - Max 40 m/s 1-4 max 100 m/s	No
3. The rocket changes its direction after the fourth second. Justification: Slope represents acc, so we are going from + to - acc. slowing down but still going up.	No
4. During the time interval from 4 to 9 seconds, the rocket is moving in the positive direction (up) and slowing down. Justification: yes it will reach peak at 9sec and thus zero velocity	yes
5. At nine seconds, the rocket has returned to its initial starting position. Justification: it is at max height	No