P11

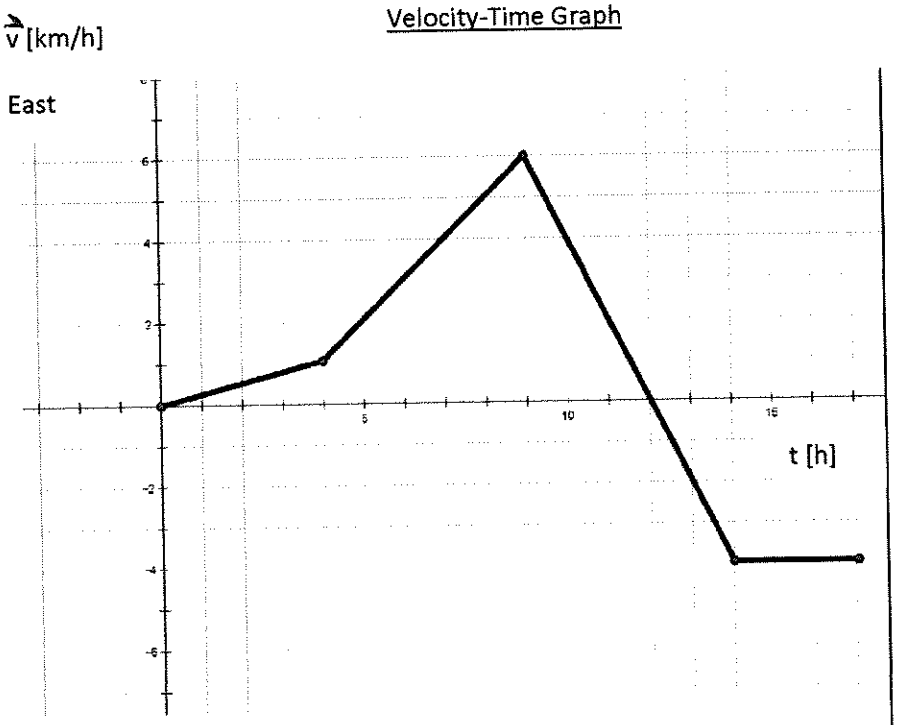
VELOCITY-TIME GRAPHS

- Velocity-Time graphs plot _____ on the horizontal axis and _____ on the vertical axis.
- The slope of a velocity-time graph gives the _____
- _____ of an object cannot be read off the velocity-time graph.

Information a velocity-time graph can gives:

1. direction of the motion
   - above the time axis = _____
   - below the time axis = _____
2. Magnitude of velocity = number read off the vertical axis.
3. Time interval during which motion is uniform = line is horizontal (= flat)
4. Time interval during which motion is NONUNIFORM = line has either positive or negative slope
5. Time interval during which an object does not move = line coincides with the time axis
6. Time when the object is at rest = graph crosses the time axis.

Velocity-Time Graph



Assuming that one square on the grid above means 1 hour on the time axis and 1 km/h [E] on the velocity axis, answer the following questions:

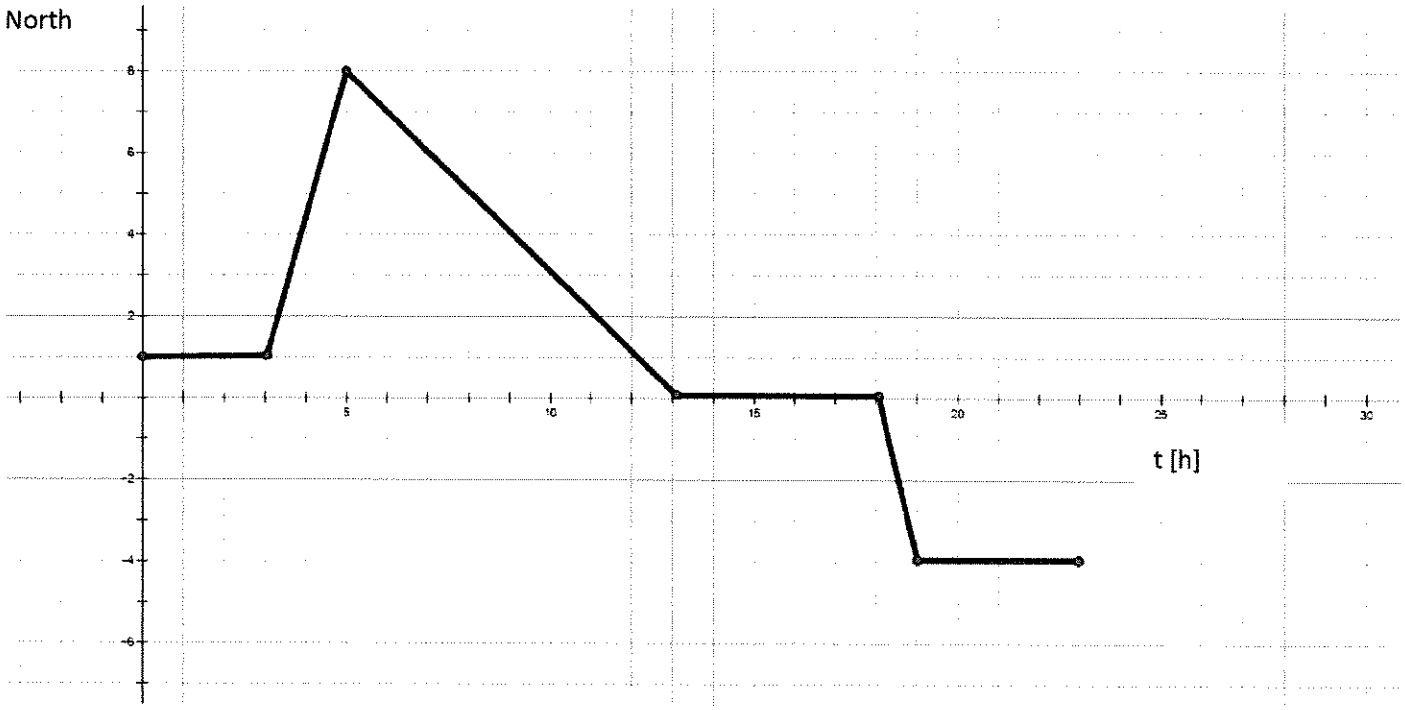
1. Is the object ever at rest? **WHY or WHY NOT?** _____
2. When does the object move at constant velocity? _____
3. What is the magnitude and direction of this constant velocity? _____
3. When does the object move east? _____
4. When does the object move west? _____
5. What is the object's initial position? _____
6. What is the object's final position? _____
7. What is the object's acceleration over the first 4 h? _____
8. What is the object's acceleration from 9h to 12 h?

_____

9. What is the object's acceleration from 14h – 17h? _____

Velocity-Time Graph

$\vec{v}$ [km/h]



Assuming that one square on the grid above means 1 hour on the time axis and 1 km/h [N] on the velocity axis, answer the following questions:

1. Is the object ever at rest? **When or WHY NOT?** _____

2. When does the object move at constant velocity? _____ and _____

3. What is the magnitude and direction of these constant velocities? _____ and _____

3. When does the object move South? _____

4. When does the object move north? _____

5. What is the object's initial position? _____

6. What is the object's final position? _____

7. What is the object's acceleration over the first 3 h? _____

8. What is the object's acceleration from 5h to 13h? _____

9. What is the object's acceleration from 19h to 23h? _____

10. What is the object's acceleration between 13 and 18 h? _____

11. What is the object's acceleration from 3h to 5h? _____

12. Do you have any questions? _____