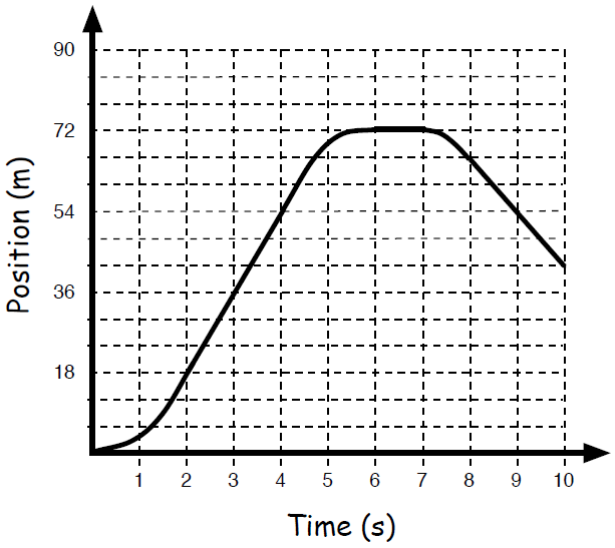
Name: _____ Block: _____

Motion Graphs

1. An object's motion is described by the following graph of position *vs.* time:

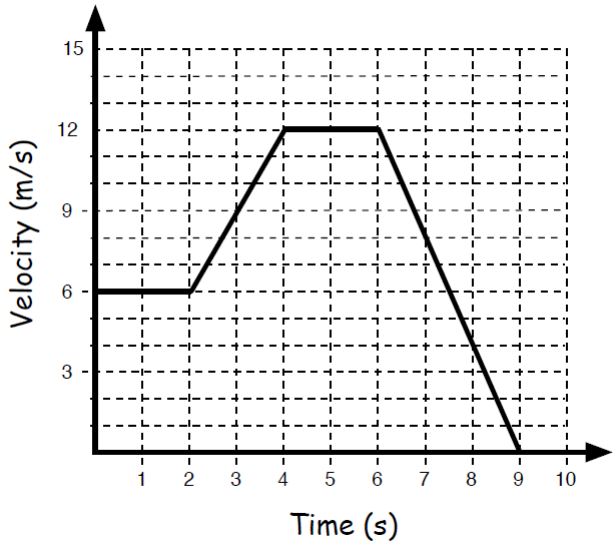


(a) What is the object doing between 2 s and 4 s? What is its velocity during that interval?

(b) What is the object doing between 6 s and 7 s? What is its velocity during that interval?

(c) What is the object doing between 8 s and 10 s? What is its velocity during that interval?

2. An object's motion is described by the following graph of velocity *vs.* time:

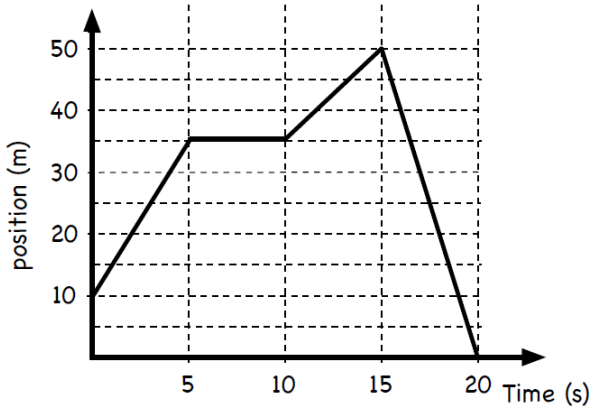


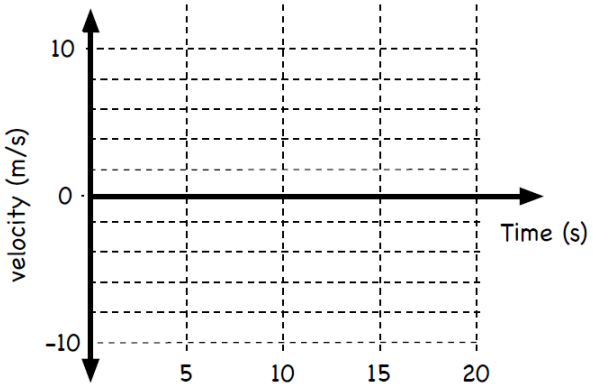
(a) What is the object doing between 0 s and 2 s? What are its velocity and acceleration during that interval?

(b) What is the object doing between 2 s and 4 s? What is its acceleration during that interval?

(c) What is the object doing between 6 s and 9 s? What is its acceleration during that interval?

3. The graph on the left below shows the position of an object *vs.* time. Sketch a graph of velocity *vs.* time for the same object on the graph on the right.





4. In 1991, Carl Lewis became the first sprinter to break the 10-second barrier for the 100 m dash, completing the event in 9.86 s. The chart below shows his time for each 10 m interval.

distance	interval (s)	time (s)
0 m	0	0
10 m	1.88	1.88
20 m	1.08	2.96
30 m	0.92	3.88
40 m	0.89	4.77
50 m	0.84	5.61
60 m	0.84	6.45
70 m	0.84	7.29
80 m	0.83	8.12
90 m	0.85	8.97
100 m	0.89	9.86

Plot Lewis's displacement *vs.* time and velocity *vs.* time on the graphs below.