A particle is moving along the *x*-axis so that at a time *t* (in seconds), it is at a position   
(in metres).  
a) Find its average velocity in the first 3 seconds.   
  
  
  
  
  
  
b) Find its instantaneous velocity as a function of *t*.   
  
  
  
  
  
  
c) In which direction is it moving at time ?   
  
  
  
  
d) On which side of the origin is it at time ?   
  
  
  
  
  
e) At what time(s) is the particle changing direction?