**QUIZ 3.1 – 3.6**

1. Find the derivative of each of the following. Be sure to simplify when possible. [12]  
   a)   
     
     
     
     
     
     
   b)   
     
     
     
     
     
     
   c)   
     
     
     
     
     
     
   d)   
   e)  
     
     
     
     
     
     
     
   f)
2. Find the equation of the tangent line to at the point where *x* =3. [3]
3. A particle’s position along a number line is given by *s*(*t*) = 9*t*2 – 18*t*, for *t* ≥ 0 [5]
4. Find the particle’s velocity and acceleration functions.
5. When does the particle change direction?
6. Find the displacement of the particle in the first 3 seconds.
7. Is the particle speeding up or slowing down when t = 2?