**QUIZ 3.1 – 3.6**

1. Find the derivative of each of the following. Be sure to simplify when possible. [12]
a) $y=cos^{2}(2-x)$

b) $y=cotx (secx-3)$

c) $y=\sqrt{\left(3x-1\right)cosx }$

d) $y =\left(4x-2\right)^{-4}\left(2x+1\right)^{2}$
e)$y=\frac{2\sqrt{x}-3x}{5x^{3}-1}$

f) $y=sec⁡(3-sinx))$
2. Find the equation of the tangent line to $f\left(x\right)=5 . \sqrt{\frac{x-2}{x+1}}$ 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?