MAC1140 Written Homework 4

Due: 9/25/2015

1. Find the slope between the points $(1, 3)$ and $(6, 4)$.

2. Write the point-slope form equation of the line between the given pairs of points:

   (a) $(-2, -5)$ and $(1, 3)$.

   (b) $(-3, 3)$ and $(2, 3)$.

3. Write the slope-intercept form equation of the line between the given pairs of points:

   (a) $(-2, 3)$ and $(5, -5)$.

   (b) $(-3, 3)$ and $(-3, 3)$.

4. Find the equation of the line `parallel` to the line $x - 3\,y - 6 = 0$ and passing through the point $(-4, -1)$.

5. Find the equation of the line `perpendicular` to the line $4\,x + y + 1 = 0$ and passing through the point $(2, -6)$.

6. Let $f(x) = x^2 + 2\,x$, find and simplify the difference quotient $\dfrac{f(x+h) - f(x)}{h}$, $h \neq 0$.

7. Find the zeros of the following functions.

   (a) $\sqrt{-x^2 + 9}$

   (b) $x^3 - 27\,x - 54$