

# Math 221: Homework Exercises

## 1 The Definition of a Derivative

1. For each of the following functions, use limits to find (i) the slope of the tangent line at  $x = 4$ , and (ii) the equation of the tangent line at  $x = 4$ .

(a)  $f(x) = 5x^2 - 2x$ .

(b)  $g(x) = \frac{3}{x}$ .

(c)  $h(x) = 3\sqrt{x}$ .