Worksheet 7 - Section 2.2
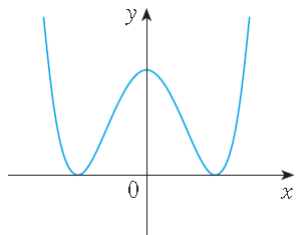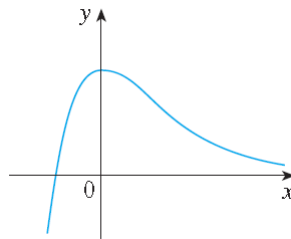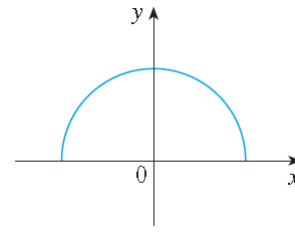
(1) Trace or copy the graph of the given function f. (Assume that the axes have equal scales.) Then, draw the graph of f' below it.
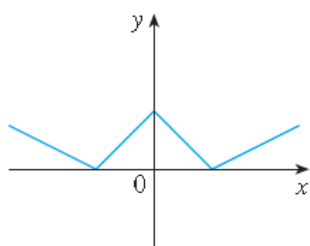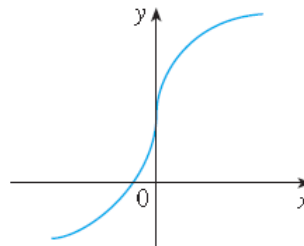

(a)

(b)

(c)

(d)

(e)

(2) Find the derivative of the function using the definition of the derivative. State the domain of the function and the domain of its derivative.
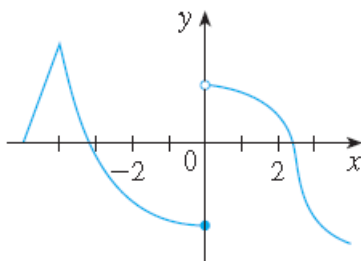
(a) $f(t) = 5t - 9t^2$,

(b) $g(x) = \sqrt{9 - x}$
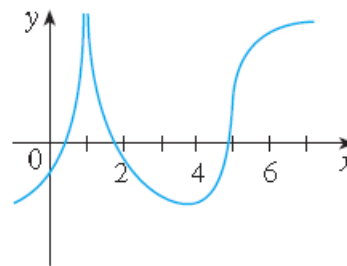
(c) $G(t) = \frac{1-2t}{3+t}$,

(d) $f(x) = x^4$

(3) If $f(x) = x + 1/x$, find $f'(x)$.

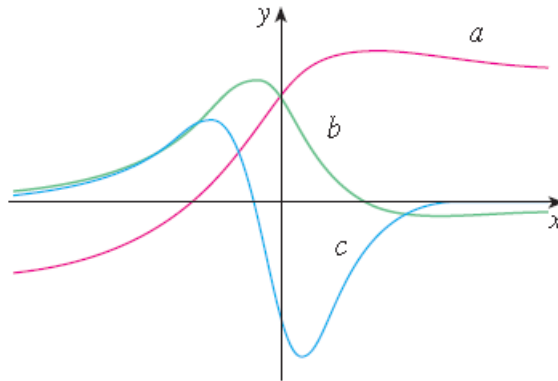(4) The graph of f is given. State, with reasons, the numbers at which f is not differentiable.

(a)

(b)

(5) The figure shows the graphs of f, f', and f''. Identify each curve and explain your choices.

(6) Show that the function $f(x) = |x - 6|$ is not differentiable at 6. Find a formula for f' and sketch its graph.