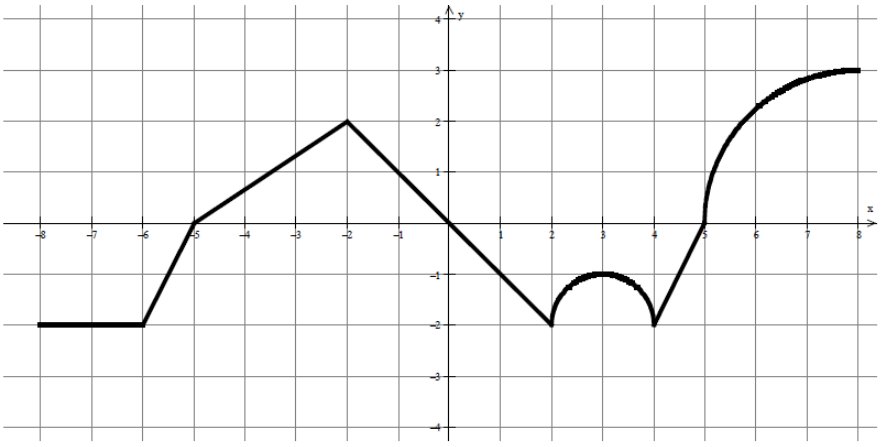
AP Calc – In Class Rev

1. If $F(x) = \int_1^x f(t)dt,\ where\ f(t) = \int_1^{t^3} \frac{5+u^2}{u} du$, Find $F''(3)$.

2. The graph of *f* consists of 5 line segments, a semicircle and a quarter of a circle. Let *g* be the function given by $g(x) = \int_2^x f(t)dt$



a) Find *g(-5), g(0)* and *g(4)* or explain why it does not exist.

b) Find the intervals on which *g* is increasing.

c) Find the intervals on which *g* is concave down.

d) Find all values of x in the open interval (-8, 8) at which g attains a relative minimum or maximum. Justify your answer.

e) What is the absolute maximum of *g* on [-8, 8]. Justify your answer.