

3. [8 points]

a. [4 points] Write a formula for the function  $G(t)$  whose derivative is  $\cos(5t)$  and whose graph passes through the point  $(0, 3)$ .

b. [4 points] Write a formula for the function  $H(t)$  whose derivative is  $\cos(t^5)$  and whose graph passes through the point  $(0, 3)$ .

4. [5 points] A deep sea diver is swimming to the surface of the water from a depth of 50 meters. At a depth of  $x$  meters below the surface of the water, the water pressure is changing at a rate of  $a(x)$  pascals/meter (pascal is the metric unit for pressure). If the water pressure is 592,000 pascals at a depth of 50 meters, write an expression involving integrals that gives the water pressure in pascals when the diver is  $x$  meters from the surface of the water.