

(1.) (1 pt each) True / False--Circle your choice. Circle **T** only if the statement is *always* true.  
[No explanation necessary.]

(a) If  $f'(x) = g'(x)$  for all  $x$ , then  $f(x) = g(x)$  for all  $x$ . **T**    **F**

(b) If  $f''(a) = 0$ , then  $f$  has an inflection point at  $x = a$ . **T**    **F**

(c) If  $x = p$  is not a critical point of  $f$ , then  $x = p$  is not a local maximum of  $f$ . **T**    **F**

(d) If  $\int_0^2 f(x)dx = 6$  then  $\int_0^4 f(x)dx = 12$ . **T**    **F**

(e) If  $\int_0^2 f(x)dx = 6$  and  $h(x) = 5f(x)$  then  $\int_0^2 h(t)dt = 30$ . **T**    **F**

(2.) (4 pts.) Is the function  $g(x) = x^3 - \frac{x}{16}$  invertible? \_\_\_\_\_

Below, give a clear justification for your answer.

(3.) (3 pts.) [No need to simplify, but show *all* of your work. Circle your answer.]  
Find the derivative of  $s(x) = \sin^5(3x^2 - 2)$ .