5. (2 points each) Circle "TRUE" or "FALSE" for each of the following problems. Circle "TRUE" only if the statement is *always* true. No explanation is necessary.

(a) $\int (1+y^2)\left(\frac{1}{y}\right)\,dy = (y+y^3)(\ln|y|)+C$

TRUE **FALSE**

(b) If f is any continuous function, then $\int_0^2 f(x)\,dx = \int_0^2 f(t)\,dt$.

TRUE FALSE

(c) If $\int_{-1}^2 g(x)\,dx + 6 = 10$ and g is an odd function, then $\int_1^2 g(x)\,dx = 4$.

TRUE FALSE

(d) If $\int_1^3 f(x)\,dx = 3$, then $\int_1^3 (3f(x)+2)\,dx = 11$.

TRUE **FALSE**

(e) If an object has constant nonzero acceleration, then the position of the object as a function of time is a quadratic polynomial.

TRUE FALSE

(f) If $f''(x)$ is continuous (over all the real numbers) and the graph of f has an inflection point at $x = p$, then $f''(p) = 0$.

TRUE FALSE