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

   TRUE   FALSE

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

   TRUE   FALSE

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

   TRUE   FALSE

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

   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