1) (2 pts each) True/False—Circle your choice. Circle T only if the statement is always true. [No explanation necessary.]

(a) $\ln(AB) = (\ln A)(\ln B)$  
(b) $\ln e^{2t} = 2t - 1$  
(c) $\sin(3a) = 3\sin(a)$  
(d) As $x \to \infty$, $x^{0.1}$ dominates $1,001^x$  
(e) $\log(10A) = \log A + 1$ $(A > 0)$  
(f) A $5^{th}$ degree polynomial must have at least one real zero.

2) (5 pts—No explanation necessary.) The graphs of three functions are given in the figure below.

Complete each of the statements below by using the symbols $>, <, \text{ or } =$.

$a < q$  
$a = c$  
$b > d$  
d >

Which, if any, of the parameters $a,b,c,d,q,v$ are greater than zero? $\underline{\text{all}}$