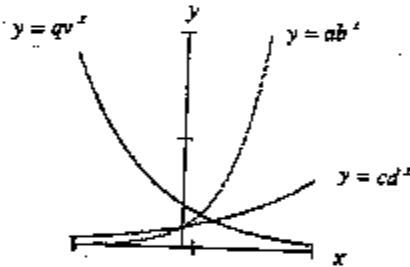


- 1.) (2 pts each) True / False--Circle your choice. Circle T only if the statement is always true.  
[No explanation necessary.]

- (a)  $\ln(AB) = (\ln A)(\ln B)$                       T     F
- (b)  $\ln e^{2t-1} = 2t-1$                                T    F
- (c)  $\sin(3a) = 3\sin(a)$                         T     F
- (d) As  $x \rightarrow \infty$ ,  $x^{100}$  dominates  $1.001^x$     T     F
- (e)  $\log(10A) = \log A + 1$  ( $A > 0$ )         T    F
- (f) A 5<sup>th</sup> degree polynomial must have at least one real zero.                       T    F

- 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  $>$ ,  $<$ , or  $=$ .

$$a \underline{<} q \qquad a \underline{=} c \qquad b \underline{>} d \qquad d \underline{>} v$$

Which, if any, of the parameters  $a, b, c, d, q, v$  are greater than zero?

all