3. [13 points] In part (a) of this problem, you should **show your work** and make sure your answers are **exact**. Note that *part (b) is independent of part (a).*

    a. [9 points] There are $T(d)$ termites in an abandoned house on day d. Starting at $d = 0$, the population of termites increases by 30% each day, and reaches a peak of 28,561 termites at $d = 4$. Starting at $d = 4$, the termite population declines at a constant rate, up until $d = 8$ when there are no termites left. Write a *piecewise-defined* formula for $T(d)$ in terms of d *in the spaces provided.*

$$T(d) = \begin{cases} \rule{8cm}{0.4pt} & \text{if} \quad \rule{3cm}{0.4pt} \\[2em] \rule{8cm}{0.4pt} & \text{if} \quad \rule{3cm}{0.4pt} \end{cases}$$

    b. [4 points] The termites at the abandoned house have begun attracting birds. The number of birds B, along with the temperature T (in °F) and the wind speed W (in miles per hour) have been recorded at various times h, where h is measured in hours after 8 a.m. on October 10.

h	0	1	2	3	4	5
B	10	11	15	13	11	5
T	30	33	40	39	33	31
W	14	10	13	12	11	10

Based on the table above, which of the following statments *could* be true about h, B, T and W? **Circle all that apply**.

      B is a function of T   *T is a function of B*   *W is a function of B*

      B is a function of W   *h is a function of T*   *W is a function of T*