Alice & Wonderland: Cake & Tea

Alice is 1 meter tall.
Everytime Alice eats an ounce of cake, she doubles in size.
Everytime she drinks an ounce of tea, she shrinks half her size.

1.) Find 5 combinations of amounts of cake and tea that would make Alice stay the same height. Did she eat more or drink more? Express your results using exponents.
2.) Find 5 combinations of cake and tea that would make Alice grow 8 times her height. Did she eat more or drink more? Express your results using exponents.
3.) Find 5 combinations of cake and tea that would make Alice shrink to 1/8 of her height. Did she eat more or drink more? Express your results using exponents.
4.) Find 5 combinations of cake and tea that would make Alice grow 32 times her height. Did she eat more or drink more? Express your results using exponents.
5.) Find 5 combinations of cake and tea that would make Alice shring to 1/32 of her height. Did she eat more or drink more? Express your results using exponents.
6.) If Alice eats no cake and drinks no tea, how much will Alice grow or shrink? If Alice eats no cake and drinks no tea, what is Alice's height? What exponent of 2 means that Alice ate no ounces of cake? Find a in this equation $2^a = 1$.
7.) Assume Alice doubled her height e times, and halved her height d times. How many ounces of cake did Alice eat? How many ounces of tea did Alice drink? What happens to Alice if e = d?
8.) Assume Alice shrank half her size d times. What exponent of 2 equals these results? Assume Alice drank 1 ounce of tea and shrank to half her size. What exponent of 2 equals these results? Find a in this equation: $2^a = \frac{1}{2}$.
9.) Assume Alice ate e ounces of cake and drank d ounces of tea. Express the results using exponents with 2 as the only base. Simplify your expression using the additive rule of exponents.
10) Express the results of the previous problem as a quotient.
11) In each expression below:
    How many ounces of cake and tea does Alice have? What is her height afterwards?(* is the multiplication symbol here)
    a) $2 * 2 * 2 * \frac{1}{2} * \frac{1}{2} * 2 * 2 * 2 * \frac{1}{2} * \frac{1}{2}$
    b) $\frac{1}{2} * \frac{1}{2} * 2 * \frac{1}{2} * \frac{1}{2} * 2 * \frac{1}{2} * \frac{1}{2} * 2 * \frac{1}{2} * \frac{1}{2} * 2$
    c) $2^0 * (\frac{1}{2})^0$
    d) $2^1 * (\frac{1}{2})^0$
    e) $2^1 * (\frac{1}{2})^1$
    f) $2^{13} * (\frac{1}{2})^{10}$
    g) $2^0 * (\frac{1}{2})^0$
12) Find a in this equation $2^a = \frac{1}{2}$.
    Redo the previous exercise substituting 2^a for $\frac{1}{2}$.