1. Laura sends an average of 27 text messages per month to each of $f$ friends. Her cell phone provider charges her a flat rate of $3.50 per month and $0.04 per text message. The function $t(f)$ gives the total number of text messages Laura sends each month to $f$ friends, and $g(t)$ gives the amount Laura is charged by her cell phone provider for $t$ text messages.

    **a.** Write an equation for $t(f)$ and $g(t)$.

    **b.** Find $g\left(t\left(f\right)\right)$.

    **c.** What does $g\left(t(16)\right) > 20.36$ mean in the context of this problem?

2. A discount function D(x) that take 10% off an entire purchase can be given by D(x) = 0.90x where x is the amount of the entire purchase. A tax function T(x) that adds a tax of 10% to an entire purchase can be given by T(x) = 1.10x.

    a. Explain why the function $D(x) = 0.90x$ models a situation where an item is 10% off the original price, $x$, and why the function $T(x) = 1.10x$ models a situation where an item is increasing in price by 10%.

    b. Find $D(T(x))$ and $T(D(x))$. Explain what $D(T(x))$ and $T(D(x))$ represent.

    c. Compare the 2 compositions. Which one is a better deal?