1. Suppose $\cos(\theta) = -\frac{2}{3}$ and $\frac{\pi}{2} \leq \theta \leq \pi$.

   a. What is $\sin(\theta)$?

   b. What is $\tan(\theta)$?

2. Find a function of the form $f(x) = ae^{bx}$ with the given function values.

   a. $f(0) = 2$, $f(2) = 5$

   b. $f(0) = 4$, $f(3) = 1$