

Let $f(x) = x^3 - 2x$.

1. Plot $f(x)$ from $x = -2$ to $x = 2$.
 - (a) Where does f have local maxima? minima?
 - (b) Where is f concave up? concave down?
 - (c) Where does f have inflection points?
2. In each of the following cases, explain how the graphs are related to the graph of $f(x)$.
 - (a) $f(x) + a$ with $a = 2$ and $a = -1$
 - (b) $f(x + a)$ with $a = 2$ and $a = -1$
 - (c) $a f(x)$ with $a = 2$, $a = 0.5$ and $a = -1$
 - (d) $f(ax)$ with $a = 2$, $a = 0.5$ and $a = -1$