ALGEBRA 2
PROBLEM SET #12

DUE DATE: OCTOBER 18, 2023; END OF CLASS

Question 1. Let $f(x) = -3(x+2)(x-4)$.

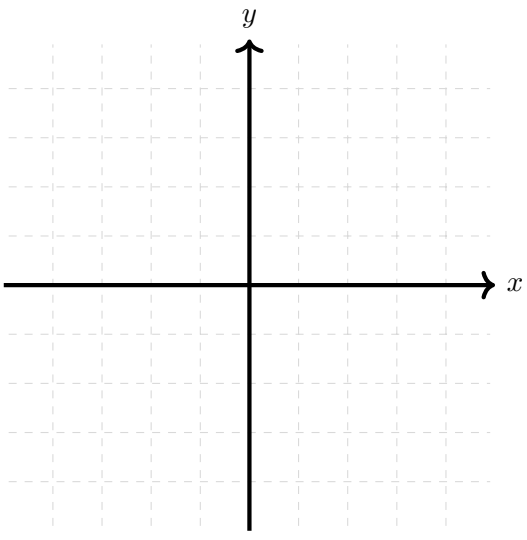
(a) Prove that $f(x)$ is a quadratic by FOILing out $f(x)$.

(b) Are the arrows of $f(x)$ facing **up** or **down**?

(c) Where is the **vertex** of $f(x)$?

(d) Where is the y-intercept? Where are the x-intercepts?

(e) Draw a graph of $f(x)$.



Question 2. Let $g(x) = x^2 + 6x - 8$.

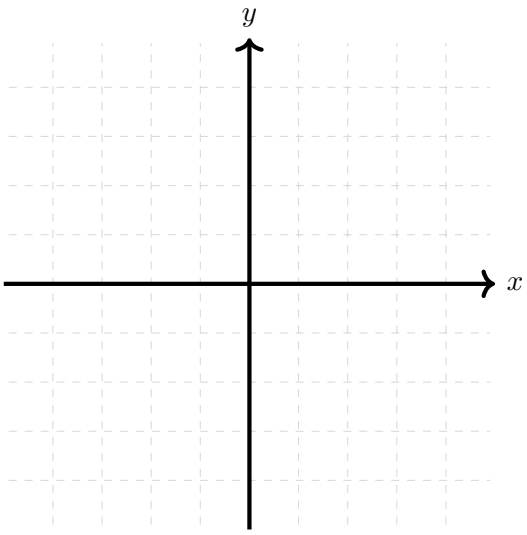
(a) Prove that $g(x)$ is a quadratic by FOILing out $g(x)$.

(b) Are the arrows of $g(x)$ facing **up** or **down**?

(c) Where is the **vertex** of $g(x)$?

(d) Where is the y-intercept? Where are the x-intercepts?

(e) Draw a graph of $g(x)$.



Question 3. Let $f(x) = -3(x - 15)(x + 2023)$. Using a sign diagram, determine when $f(x) > 0$ and when $f(x) < 0$.