These are alleged answers. For each error herein, you get extra-credit points for being the first to report it by e-mail.

1 Recall that

\[
NQ = \frac{f(x + h) - f(x)}{h}.
\]

We spend a bit of time on \(f(x + h)\): we write the function definition in a fill-in-the-blanks form:

\[
f\left( \right) = 2\left( \right)^2 + 8\left( \right) - 1,
\]

and then write in the \(x + h\) in every blank:

\[
f(x + h) = 2(x + h)^2 + 8(x + h) - 1
\]

\[
= 2(x^2 + 2hx + h^2) + 8x + 8h - 1
\]

\[
= 2x^2 + 4hx + 2h^2 + 8x + 8h - 1
\]

Next we work a little bit on the numerator of \(NQ\):

\[
f(x + h) - f(x) = \left(2x^2 + 4hx + 2h^2 + 8x + 8h - 1\right) - \left(2x^2 + 8x - 1\right)
\]

\[
= 2x^2 + 4hx + 2h^2 + 8x + 8h - 1 - 2x^2 - 8x + 1
\]

\[
= 4hx + 2h^2 + 8h = h(4x + 2h + 8).
\]

This means that

\[
NQ = \frac{f(x + h) - f(x)}{h} = \frac{h(4x + 2h + 8)}{h} = 4x + 2h + 8.
\]

2 For the exact \(x\)-intercepts for the graph of \(f(x) = 2x^2 + 8x - 1\), we solve \(f(x) = 0\) for \(x\):

\[
b^2 - 4ac = 8^2 - 4(2)(-1) = 72,
\]

so that the \(x\)-coordinates of the \(x\)-intercepts:

\[
x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-8 \pm \sqrt{72}}{4}
\]
For for the graph of \( f(x) = 2x^2 + 8x - 1 \) we see that
\[
\begin{align*}
x_{\text{vertex}} &= \frac{-b}{2a} = -\frac{8}{2(2)} = -2 \\
y_{\text{vertex}} &= f(x_{\text{vertex}}) = f(-2) = -9.
\end{align*}
\]

Thus we have completed the square: \( f(x) = 2(x + 2)^2 - 9 \).

So our graph is an upward-opening parabola like this:

\[ (-2, -9) \]

We put the \( y \)-intercept on this graph:

\[ (0, -1) \]

\[ (-2, -9) \]

And then it’s fairly easy to see where to put the coordinate axes: