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:
\[ f\left( \right) = 15 - 12\left( \right) - 3\left( \right)^2, \]
and then write in the \( x + h \) in every blank:
\[
\begin{align*}
f(x + h) &= 15 - 12(x + h) - 3(x + h)^2 \\
&= 15 - 12x - 12h - 3(x^2 + 2hx + h^2) \\
&= 15 - 12x - 12h - 3x^2 - 6hx - 3h^2
\end{align*}
\]

Next we work a little bit on the numerator of \( NQ \):
\[
\begin{align*}
f(x + h) - f(x) &= \left( 15 - 12x - 12h - 3x^2 - 6hx - 3h^2 \right) - \left( 15 - 12x - 3x^2 \right) \\
&= 15 - 12x - 12h - 3x^2 - 6hx - 3h^2 - 15 + 12x + 3x^2 \\
&= -12h - 6hx - 3h^2 = h(-12 - 6x - 3h)
\end{align*}
\]

This means that
\[ NQ = \frac{f(x + h) - f(x)}{h} = \frac{h(-12 - 6x - 3h)}{h} = -12 - 6x - 3h. \]

2 For the exact \( x \)-intercepts for the graph of \( f(x) = 15 - 12x - 3x^2 \), we solve \( f(x) = 0 \) for \( x \):
\[ b^2 - 4ac = (-12)^2 - 4(-3)(15) = 324, \]
so that the \( x \)-coordinates of the \( x \)-intercepts:
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{12 \pm 18}{-6} = -2 \pm 3 \quad \text{or} \quad x = -5, \ x = 1 \]
For the graph of \( f(x) = 15 - 12x - 3x^2 \) we see that

\[
x_{\text{vertex}} = -\frac{b}{2a} = -\frac{8}{2(2)} = -2 \quad \text{and} \quad y_{\text{vertex}} = f(x_{\text{vertex}}) = f(-2) = 27
\]

(corrected). Thus we have completed the square: \( f(x) = -3(x + 2)^2 + 27 \) (corrected).

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

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

And then it’s fairly easy to see where to put the coordinate axes and \( x \)-intercepts: