Quiz 8

Let
\[ H(x) = \frac{3 - 4x^2}{x^2 + x} . \]

1. Find an equation for the horizontal asymptote, if there is one.

**Solution:** By the asymptote theorem, the horizontal asymptote is given by \( y = \frac{a_2}{b_2} = \frac{-4}{1} = -4 \).

2. Find equations for each of the vertical asymptotes.

**Solution:** By the asymptote theorem, the vertical asymptotes are given by \( x = -1 \) and \( x = 0 \) since the zeros of the function \( x^2 + x = x(x + 1) = 0 \) are \( x = 0 \) and \( x = -1 \).