Factor \( x^2 + 8x + 12 \)

Recall

\[(x+2)(x+3)\]
\[x^2 + 3x + 2x + 6\]
\[x^2 + 5x + 6\]

\[x^2 + 8x + 12 = (x\quad ?)\]

\[\frac{(2)(6) = 12}{\text{factors of 12}}\]

\[2 + 6 = 8\]

\[x^2 + 8x + 12 = (x+2)(x+6)\]