FACTORING USING DIVISION

Name: _____ Date: _____ Period: _____

Determine if the given binomial is a factor of f(x). If it is, factor f(x) completely.

1. Is $x - 2$ a factor of $f(x) = x^3 + 8x^2 - 31x + 22$?

2. Is $x - 3$ a factor of $f(x) = 4x^4 - x^3 - 52x^2 - 35x + 12$?

3. Is $x - 12$ a factor of $f(x) = x^4 - 12x^3 + x^2 - 12x$?

4. Is $x - 8$ a factor of $f(x) = x^3 - 7x^2 - 14x + 48$?

5. Is $x - 5$ a factor of $f(x) = x^3 + 5x^2 - x - 5$?

6. Is $3x + 4$ a factor of $f(x) = 3x^3 + 13x^2 + 18x + 8$?