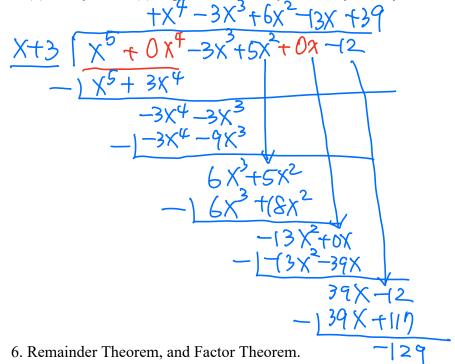


- 5. Given  $f(x) = x^5 3x^3 + 5x^2 12$ , and g(x) = x + 3. (a) Divide the fraction via long division:  $\frac{f(x)}{g(x)}$ 
  - (b) Find f(-3). (c) Is g(x) a factor of f(x)? Why or why not?



Assume g(x) = x - c, and the long division of f(x) by g(x) has remainder r, that is,

- (1) The remainder when dividing f(x) by (x c) is \_\_\_\_\_ since \_\_\_\_
- $(2) f(c) = 0 \Leftrightarrow \underline{\hspace{1cm}} \text{ of } f(x).$
- 7. Given  $f(x) = x^5 3x^3 + 5x^2 12$ , and g(x) = x + 2. (a) Divide the fraction via long division:  $\frac{f(x)}{g(x)}$ 
  - (b) Find f(-2). (c) Is g(x) a factor of f(x)? Why or why not?