**LT #4: Polynomial Division**

1.
a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.

See answer at left

3.

 YES or NO

 /11

1.

1. Use synthetic division to find $\left(x^{3}-3x-2\right)÷\left(x+1\right).$ (3 points)
(Be careful!)
2. Is x+1 a factor? Explain your reasoning. (2 points)

2. Divide using long division $\left(x^{3}+2x^{2}-5x-6\right)÷\left(x+4\right)$. Write your answer as a quotient statement. (4 points)

$$\left(x^{3}+2x^{2}-5x-6\right)÷\left(x+4\right)=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

3. Determine if $x-3$ is a factor of $x^{3}-3x^{2}+2x-4$ using either
 substitution or synthetic division. You must show work! (2 pts)