Code_____ NAME: _____ Date:_____

SW1 *Synthetic Division, Remainder/Factor Theorems*

I. MULTIPLE-CHOICE OR CONSTRUCTED RESPONSE. (7 pts) Write on the blank before each number the **CAPITAL LETTER** which corresponds to the correct answer; otherwise, write the answer.

*For numbers 1 and 2, determine whether the statement is **TRUE** or **FALSE**.*

_____**1.** Remainder Theorem can be used to find the quotient of the division of polynomials.

_____**2.** When a polynomial is divided by x, the remainder equals to the constant term of the polynomial.

For numbers 3 and 4, determine whether the given binomial is a factor of $3x^3 + 10x^2 + x - 6$. *Write **YES** or **NO**.*

_____**3.** $(x + 3)$

_____**4.** $(x - 1)$

_____**5.** What is the remainder when $x^{2026} - x^{67}$ is divided by $x + 1$?

_____**6.** What is the remainder when $3x^3 + 2x^2 - 5x + 3$ is divided by $(x - 2)$?

A. -39 B. -19 C. -3 D. 25

_____**7.** When the polynomial $x^4 - 3x^3 - 7x^2 + 7x + 2$ is divided by $x + 2$, the quotient is $x^3 + Rx^2 + Nx + 1$. What is the value of $\boldsymbol{R} + \boldsymbol{N}$?

A. -8 B. -2 C. 0 D. 2

II. COMPUTATION. (8 pts) Divide using synthetic division

1. $(x^3 + 4x^2 - 3x - 18) \div (x - 2)$

a) Determine $c =$ _____

_____

_____

Ans:

2. $(3x^3 + 10x^2 - 5) \div (x + 3)$

a) Determine $c =$ _____

_____

_____

Ans:

LIVEWORKSHEETS