ACMAT100 Spring 2025
Professor Manguba-Glover
Sections 4.1-4.3 Classwork (CW 7) Name: _____

Complete as many of the following problems as you can. You do not have to go in order. You can use a calculator to check your work but not to solve the problems.

If **your entire table** finishes early, you may leave early.

(1) Perform the indicated operation and simplify your answers:

(a) $\left(-7x^3 + 2x^2 - 2x + 9\right) + \left(6x^3 + 6x^2 - 5x - 10\right)$

(b) $\left(3x^3 - 4x^2 + 3x - 5\right) - \left(6x^3 - 7x^2 - 10x + 4\right)$

(c) $(5x^2y - 8xy) + (10x^2y - 11xy + 9xy^2)$

(d) $(x^3 - 5xy + 10y^2) - (7x^3 + 10xy + 9y^2)$

(2) Perform the indicated operation and simplify your answers:

(a) $(5x + 6)^2$

(b) $(x + 3)(x^2 - 3x + 9)$

(c) $(2x + 3)(2x - 3)$

(d) $(x + 7y)(3x + 5y)$

(3) Divide the following polynomials

(a) $\dfrac{x^3+1}{x-1}$

(b) $\dfrac{x^2-8x+4}{x-3}$

(c) $\dfrac{27x^3+9x^2-3x-9}{3x-2}$

(d) $(3x^3+x^2+2x+5) \div (x^2+2x+1)$

Key:

(1) (a) $-x^3+8x^2-7x-1$
(b) $-9x^3+3x^2+13x-9$
(c) $15x^2y-19xy+9xy^2$
(d) $-6x^3-15xy+y^2$

(2) (a) $25x^2+60x+36$
(b) x^3+27
(c) $4x^2-9$
(d) $3x^2+26xy+35y^2$

(3) (a) $x^2+x+1+\frac{2}{x-1}$
(b) $x-5+\frac{-11}{x-3}$
(c) $9x^2+9x+5+\frac{1}{3x-2}$
(d) $3x-5+\frac{9x+10}{x^2+2x+1}$