Talis Biomedical Statistics Course - Homework 0

Name:	[your first and last name]
Collaborators:	[list all the people you worked with]
Date:	[date of submission]

By turning in this assignment, I agree by the **Stanford honor code** and declare that all of this is my own work.

Algebra

Problem 1

Simplify/factor the following expressions as a trinomial.

(a) Simplify $5z^2(7z^2 + 3z - 1)$

$$5z^2(7z^2 + 3z - 1) = 5z^2 * 7z^2 + 5z^2 * 3z - 5z^2 * 1 \tag{1}$$
$$= 35z^4 + 15z^3 - 5z^2 \tag{2}$$

(b) Factor $(x - 5)^2 + 2y^3(x - 5) + y^6$

Let $U = (x - 5)$ and $V = y^3$. Then

$$(x - 5)^2 + 2y^3(x - 5) + y^6 = ((x - 5) + y^3)^2 \tag{3}$$
$$= (U + V)^2 \tag{4}$$

Problem 2

logrithms and exponents.

(a) $\log(a) \cdot \log_a(5)$

(b) $\exp(a) \cdots$

Problem 3

Pythagorean review

(a) test

Multivariable calculus

Problem 2

  (a) (your solution)

  (b) (your solution)

Linear algebra

Problem 3

  (a) (your solution)

  (b) (your solution)