

Name: \_\_\_\_\_

**MATH 101**

**Summer 2022**

**HW 3: Due 05/26**

*“Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.”*

*– William Paul Thurston*

**Problem 1.** (10pt) Suppose a course grade consists of the following weights:

Homework	30%
Quizzes	15%
Exam 1	20%
Exam 2	20%
Final Exam	10%
Project	5%

Suppose also that a student had a 86% homework average, 90% quiz average, 72% on exam 1, 87% on exam 2, 95% on the final, and 82% on the project. Compute the student's course average.

**Problem 2.** (10pt) Suppose a GPA consists of the following weights:

A	4.0	C+	2.3
A−	3.7	C	2.0
B+	3.3	C−	1.7
B	3.0	D	1.0
B−	2.7	F	0.0

Suppose a student had the following grades on their courses: Compute this student's GPA.

Course	Credits	Grade
Survey of Literature	3	B−
Freshman Seminar	1	A
Physics I	4	C+
World Cultures	3	A−
Spanish I	3	B
Algebra II	4	D
Macroeconomics	3	B+

**Problem 3.** (10pt) Compute the following percentages:

- (a) 40% of 260
- (b) 35% of 1050
- (c) 110% of 37
- (d) 13% of 810

**Problem 4.** (10pt) Compute the following:

- (a) 600 increased by 80%
- (b) 28 decreased by 60%
- (c) 730 increased by 170%
- (d) 45 decreased by 99%

**Problem 5.** (10pt) Convert 15 mi/min to m/s. [1 mi = 5280 ft; 1 m = 3.28084 ft]

**Problem 6.** (10pt) How many feet are in 1 furlong? [1 furlong =  $\frac{1}{8}$  mi; 1 mi = 5280 ft]

**Problem 7.** (10pt) Convert  $0.1 \text{ mi}^2/\text{s}$  to  $\text{ft}^2/\text{min}$ . [ $1 \text{ mi} = 5280 \text{ ft}$ ]

**Problem 8.** (10pt) Sand is filling into a giant rectangular container that is 5 ft wide, 8 ft long, and 1.5 ft deep. If the sand is flowing in at a rate of  $0.6 \text{ ft}^3/\text{min}$ , how long until the container is full?



**Problem 9.** (10pt) Suppose a horse bet pays \$19 for every \$2.50 bet. If you bet \$227 and win, how much should you expect to be paid?

**Problem 10.** (10pt) If you use 5 bags of flour every 7 months, how many should you purchase to have enough flour to last you 3 years? If a bag of flour costs you \$4.19, how much do you spend purchasing this amount?