

Solutions to Exercise on Grades: Mean and its relation to Grades (2.2)

100 (10)

1. Suppose you are taking the six courses shown in the table below.

a. Complete the table.

	Units	Percent of total credit for the semester	Letter Grade Earned	Nominal Grade Points
Calculus II	4	40.0%	B	4.000
Organic Chemistry I	10	100%	B	4.000
Microeconomics	3	30.0%	A	4.500
Developmental Psychology	4	40.0%	A	4.500
Music	1	10.0%	B	3.000
Accounting I	4	40.0%	C	3.000

Source: (your own work)

Total units: 26

b. Without doing any calculations, predict your grade point average (GPA) for the semester based on the grades above.

Predicted GPA: _____

c. Calculate your grade point average (GPA) for the semester. (GPA = $\sum GP_i \cdot W_i$ / $\sum W_i$.)

Use the numbers in the Nominal Grade Points Column: $GPA = 3.373$

2. The two normally occurring isomers of octane have masses of 114.230 g/mol (2,2-dimethylhexane) and 114.230 g/mol. The fractional abundance of these two isomers in naturally occurring octane is shown below. Based on these abundances, what would be the **atomic mass** (i.e. the average mass) of an atom of octane?

Isomer	Mass	Fractional Abundance
Isomer 1A	114.230 g/mol	0.980
Isomer 1B	114.230 g/mol	0.020

Atomic mass = $(0.980)(114.230) + (0.020)(114.230) = 114.230$