Practice – Part 1

Instructions: Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers under the Solutions tab in Moodle.

1. Shanley is finishing her basement. She has all the required supplies, but she needs to hire workers to install the light fixtures, trim around the doors and windows, and carpeting.

Item to be Installed	Number of Hours Needed	Cost per Hour
light fixtures	2	$50
trim	20	$35
carpeting	9	$40

   a. Which formula should be used to find the average cost per hour: the mean formula or the weighted mean formula?
   b. Calculate the average cost of labour per hour.

2. François buys 35 items from a store that sells items for a maximum price of $5.00. The receipt listed the following prices:

   $1, $1, $5, $2, $1, $1, $1, $5, $5, $3, $5, $2, $2, $3, $2, $5, $1
   $3, $3, $3, $1, $1, $1, $5, $5, $3, $2, $2, $3, $2, $5, $1, $1, $1, $5

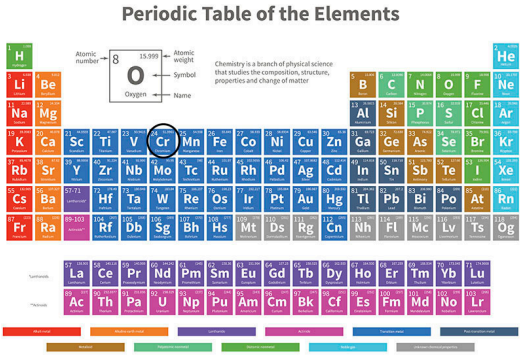
   a. Which formula should be used to find the average cost per item: the mean formula or the weight mean formula?
   b. Calculate the average cost per item.

3. Carmen would like to calculate her final mark in her statistics course.

Assessment	Weight	Carmen's Mark
Assignments	40%	88.1%
Course reviews	10%	82.5%
Exams	50%	75.0%

a. Which formula should Carmen use to calculate her mark using: the mean formula or the weighted mean formula? Explain.
b. Use the weighted mean to calculate Carmen's final mark.

4. In chemistry, the weight of an atom is measured in a tiny unit called the *atomic mass unit*, which has an abbreviation of amu. The average mass of an atom is calculated using the weighted mean formula.



The symbol for chromium is Cr. Chromium has four possible weights: 50 amu, 52 amu, 53 amu, and 54 amu.

Mass of Chromium Atom (amu)	Percent Occurrence (%)
50	4.3
52	83.8
53	9.5
54	2.4

Calculate the average weight of a chromium atom. Answer to the nearest hundredth.

5. At Prairie Enterprises, 70% of employees are software developers, 20% are engineers, and 10% are managers. Software developers make an average of \$50 K per year, and engineers make an average of \$80 K per year. If the average salary at the company is \$65 K, what is the average annual salary of the managers?

Note: "K" stands for thousand.