

## Midterm Part B

You can (and should) consult your previous programs and the various helps for Python on the Internet. You are **not** allowed to accept or solicit any help from another human being.

- (1) Write a program that asks the user for an area in square meters. It then writes out the equivalent in acres, rounded to three digits after the decimal point. One square meter corresponds to 0.000 247 105 acres.
- (2) Write a function that returns (**not prints**) the product of the sine and the cosine of the argument.
- (3) Write a function `vc(a_string)` of a string that **returns** True or False depending on whether the single argument has more vowels than consonants or not.
- (4) Write a program that pretty prints a table for  $n^2$ ,  $\exp(n/10)$ , and  $\exp(n/2)$  for  $n = 1, 2, 5, 10, 20, 50, 100$ . The table should like like this:

<code>n</code>	<code>n**2</code>	<code>exp(n/10)</code>	<code>exp(n/2)</code>
1	1	1.105	1.649
2	4	1.221	2.718
5	25	1.649	12.182
10	100	2.718	148.413
20	400	7.389	22026.466
50	2500	148.413	72004899337.386
100	10000	22026.466	5184705528587072045056.000