

For exercises on the reverse, use **complete sentences** to answer the questions, and research / use Google for any *facts* you don't know.

1. What is your EIU user id?
2. Inspect the program given in Figure 1 of the *Laboratory 1* handout.
 - (a) What will you need to modify to change what is printed from "hello, world" to your name?
 - (b) What will you need to modify to change the position of your name in the graphics window?
 - (c) How will you decide what the new position for the second line should be?
3. Complete the Java program below, including the header comments, to display the following poem in a graphics window. Each line should be separated from the others, with no overlap.

```
Roses are red,  
Violets are blue,  
Sugar is sweet,  
And so are you!
```

```
/* Author:  
 *      Mat 2170, Section  
 * Exercise: Lab 1, #4  
 * Date:  
 * File:  RosePoem.java  
 * Purpose:  
 */  
import acm.graphics.*;  
import acm.program.*;  
public class RosePoem extends GraphicsProgram {  
    public void run() {
```

```
    }  
}
```

- 4.(a) We are working under a cloudless sky, smelling the freshly mown grass in the breeze. It is 78 degrees and the humidity is only 15%. We plan to put cattle to graze in the pasture where we are working, but we need to ensure the fence surrounding it has no breaks. The pasture is rectangular in shape, and half as wide as it is long. It currently has clover growing, and a few wild flowers. It runs alongside our lane for a quarter of a mile (on the long side). I'd like to know how far I'm going to have to walk around the pasture to check the fence, since it's nearly noon and lunch will be ready soon.
- i. What are you being asked to find (problem statement)?
 - ii. What information is needed to find an answer (input data)?
 - iii. What process or formula can you use to get from the input to an answer (algorithm)?
 - iv. If you have enough information to find the answer (output), give one; otherwise, explain what is missing that is required.
- (b) Same problem as above in part (a), but I want to know how many acres the cows will be grazing
- i. What are you being asked to find (problem statement)?
 - ii. What information is needed to find an answer (input data)?
 - iii. What process or formula can you use to get from the input to an answer (algorithm)?
 - iv. If you have enough information to find the answer (output), give one; otherwise, explain what is missing that is required.
5. If I can save enough money, I would like to buy a motorcycle to commute to work, a round trip of 6 miles. I place \$1,000 in a savings account at an interest rate of $3\frac{1}{2}\%$, compounded annually. I am curious how much money will be in the account at the end of one year, and again at the end of the second year if I don't withdraw any cash during that time period and allow the interest to accumulate. The bank across the street only offers an interest rate of $1\frac{1}{4}\%$, so I think I'm getting a good deal.
- (a) What are you being asked to find (problem statement)?
 - (b) What information is needed to find an answer (input data)?
 - (c) What process or formula can you use to get from the input to an answer (algorithm)?
 - (d) If you have enough information to find the answer (output), give one; otherwise, explain what is missing that is required.