ECEG 201 – Homework 06
Due on 2020-02-28

For questions that require a written response (rather than numerical values) your answers should be **complete sentences**.

1. What are the three important attributes of a Python object?

2. If a Python object has no value, what is its type?

3. How does Python decide whether to do an integer operation or a floating-point operation when performing addition, subtraction, or multiplication?

4. Why is it important for Python to know the **type** of an object?

5. In practice, what limits the maximum possible size of an integer value in Python?

6. Suppose we want to represent a rational number (i.e. the ratio of two integers) using a binary floating-point number. Assuming that the resolution of the floating-point format is not a limitation, how can we tell whether the rational number can be represented exactly as a floating-point number?

7. Approximately how many decimal digits of resolution do we get with a single-precision floating-point value?

8. What are the exact values of `spam`, `eggs`, `ham`, and `beans` after the Python code below is executed?

```python
f1 = 5.0
f2 = 4.0
i1 = 7
i2 = 4
spam = f1 / f2
eggs = i1 / i2
ham  = i1 / f2
beans = i1 // i2
```