# Week 8 Day 1 Solutions

**Keep in mind there are many ways to tackle each problem. The following solutions are just one possible way!**

## Exercise 1:

```
import math
import sys

radiusString = input("Enter the radius: ")

try:
    radius = float(radiusString)
except:
    print("Not a valid radius!")
    sys.exit()

if radius > 0:
    print("Area = ", math.pi * radius * radius)
else:
    print("Radius must be greater than zero!")
```

## Exercise 2:

```
import sys

valIn = input("Enter an integer : ")

# Validate input is an integer
try:
    x = int(valIn)
except:
    print("Value must be an integer!")
    sys.exit()

# Validate input is positive
```

```
if x < 0:
    print("Value must be positive!")
    sys.exit()

answer = 1

# Calculate answer using a while loop...
i = 1
while i <= x:
    answer = answer * i
    i += 1
    # Or a for loop...
# for step in range(1, x + 1) :
#     answer = answer * step

print(valIn, "factorial is", answer)
```

## Exercise 3:

### Hard-coded numbers:

```
numberList = []

for nextInRange in range(1000, 3001):
    if nextInRange%5 == 0 and nextInRange%7==0:
        numberList.append(str(nextInRange))

print(','.join(numberList))
```

### User-entered values:

```
import sys

startString = input("Enter beginning of range to check: ")
endString = input("Enter end of range to check: ")
factor1String = input("Enter first factor to search: ")
factor2String = input("Enter second factor to search: ")

try:
    start = int(startString)
```

```python
        end = int(endString)
        factor1 = int(factor1String)
        factor2 = int(factor2String)
    except:
        print("Invalid input, please try again!")
        sys.exit()

    if start >= end:
        print("Starting number must be less than ending number!")
        sys.exit()

    numberList = []

    for nextInRange in range(start, end + 1):
        if nextInRange%factor1 == 0 and nextInRange%factor2==0:
            numberList.append(str(nextInRange))

    print(','.join(numberList))
```