1. Get Python 3 running on your computer, or find somewhere on the web that you can use it. Type in and run the following code, which we saw in lecture:

```python
sum = 0
for i in range(1,1001):
    sum += 1/(i*i)
print(sum)
```

If you prefer to use another programming language, get that running and write some code that does the same thing as the code above.

2. The infinite sums

\[
\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \cdots
\]

and

\[
\frac{1}{1 \cdot 2 \cdot 3} + \frac{1}{2 \cdot 3 \cdot 4} + \frac{1}{3 \cdot 4 \cdot 5} + \cdots
\]

converge to familiar numbers. Write some code to obtain good approximations for them, and make a guess at what the familiar numbers are.

(What you turn in should include both the code you wrote, and the guess that you made.)

3. Can you explain why those sums converge to the numbers you found? Explain at whatever level of formality seems best to you.