

## Excercise 1.2-3

We will be using the same technique as before with excercise 1.2-2, in order to visually determine the number, who is going to be interger.

In this case, we need to figure out when  $100 * n^2 > 2^n$ .

By plotting it in Matlab, we have the Figure 1:

The Matlab code we used is the following:

```
x = linspace(0, 20);  
y1 = 100*x.^2;  
y2 = 2.^x;  
figure();  
plot(x,y1,x,y2);  
legend('100*n^2', '2^n');
```

As we see the period that  $100n^2$  is slower than  $2^n$  is until 14 inputs. After that (15 inputs onward)  $2^n$  becomes considerably slower than  $100 * n^2$ .

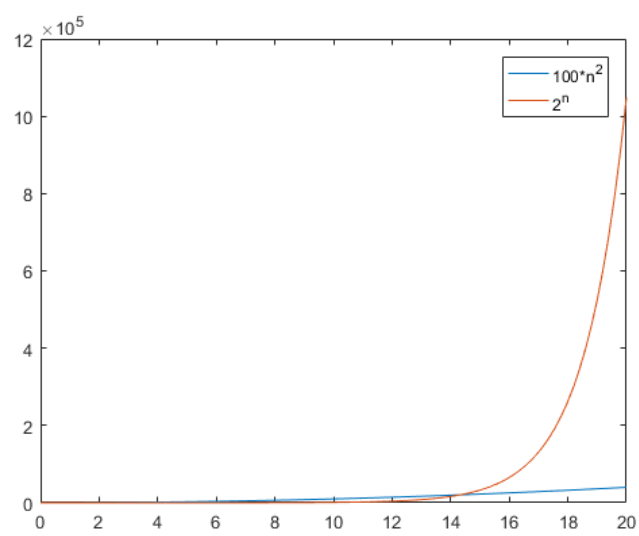


Figure 1: Our plot