

Question: What are the outputs of the following program?

```
LIMIT = 8
```

```
x = 1
```

```
while x < LIMIT:  
    x = 2 * x  
    print('x = ',x)
```

(a) 1 2 4

(b) 2 4

(c) 2 4 8

(d) 2 4 8 16

Different approach to the problem

- You can tell that (a) is not correct because the first number printed is 2
- You know that the loop is doubling the number each iteration so the only uncertainty is what the last number printed by the loop is
- You can tell that the last time the loop is executed is when x is 4. If x = 8, the loop is not executed.
- When x = 4, the loop doubles x to 8 and then outputs the number 8, so the answer is ...