Consider the following Java program:

```java
while (y > 0) {
    while (y % 2 == 0) {
        x = x * x;
        y = y / 2;
    }
    z = z * x;
    y = y - 1;
}
```

The problem requests you to solve the following:

1. Determine what the above algorithm attempts to compute;

2. Give preconditions (as general as possible) for which the algorithm soundly computes the function determined at point 1;

3. Prove that given the precondition, the algorithm is sound.