Here is some code to produce the Mathematical operation Factorial.
A Factorial of a number is all of the integers leading up to the number multiplied by each other.
So, the Factorial of 3 is 3 * 2 * 1 or 6.

```
1 FACT: PROCEDURE(X);
2    T = 1;
3    J = 1;
4    WHILE (J <= X)
5        T = T * J;
6        J = J + 1;
7    END;
8 RETURN (T);
9 END;
```

| After statement | T | J | X | Pc |
|---|---|---|---|---|
| 1 | ? | ? | $\alpha1$ | True |
| 2 | 1 | | | |
| 3 | | 1 | | |
| 4 | Need to fork | | | |
| Case 1 > $\alpha1$ | | | | 1 > $\alpha1$ |
| 7 | 1 | 1 | $\alpha1$ | 1 > $\alpha1$ |
| 8 | Return(1) | | | 1 > $\alpha1$ |
| Case 1 ≤ $\alpha1$ | | | | 1 ≤ $\alpha1$ |
| 5 | 1 | | | 1 ≤ $\alpha1$ |
| 6 | | 2 | | 1 ≤ $\alpha1$ |
| 4 | Need to fork | | | |
| Case 2 > $\alpha1$ | | | | 2 > $\alpha1$ |
| 7 | 1 | 2 | $\alpha1$ | 2 > $\alpha1$ |
| 8 | Return(1) | | | 2 > $\alpha1$ |
| Case 2 ≤ $\alpha1$ | | | | 2 ≤ $\alpha1$ |
| 5 | 2 | | | 2 ≤ $\alpha1$ |
| 6 | | 3 | | 2 ≤ $\alpha1$ |
| 4 | Need to fork | | | |
| Case 3 > $\alpha1$ | | | | 3 > $\alpha1$ |
| 7 | 2 | 3 | $\alpha1$ | 3 > $\alpha1$ |
| 8 | Return(2) | | | 3 > $\alpha1$ |
| Case 3 ≤ $\alpha1$ | | | | 3 ≤ $\alpha1$ |
| 5 | 6 | | | 3 ≤ $\alpha1$ |
| 6 | | 4 | | 3 ≤ $\alpha1$ |
| 4 | Need to fork | | | |
| Case 4 > $\alpha1$ | | | | 4 > $\alpha1$ |
| 7 | 6 | 4 | $\alpha1$ | 4 > $\alpha1$ |
| 8 | Return(6) | | | 4 > $\alpha1$ |
| Case 4 ≤ $\alpha1$ | | | | 4 ≤ $\alpha1$ |
| 5 | 24 | | | 4 ≤ $\alpha1$ |
| 6 | | 5 | | 4 ≤ $\alpha1$ |
| 4 | Need to fork | | | |
| ... | ... | ... | ... | ... |