Section 1.1

1. $t \leftarrow a, a \leftarrow b, b \leftarrow c, c \leftarrow d, a \leftarrow t$

2. If m is less than n, then on the first execution of **E3**, m and n will be switched. Otherwise, n is always greater than r by definition.

3. **F1.** [Find remainder.] Divide m by n and let r be the remainder. (We will have $0 \leq r < n$.)

   F2. [Is it zero?] If $r = 0$, the algorithm terminates; n is the answer.

   F3. [Find remainder 2.] Divide n by r and let m be the remainder. (We will have $0 \leq m < r$.)

   F4. [Is it zero?] If $m = 0$, the algorithm terminates; r is the answer.

   F5. [Find remainder 3.] Divide r by m and let n be the remainder.

   F6. [Is it zero?] If $n = 0$, the algorithm terminates; m is the answer, otherwise go to step F1.

4. $r = 1767, 399, 171, 57, 0$. The answer is 57.

5. The algorithm is not finite, its steps are not definite and there is no output. Regarding formatting, the algorithm has no name, its steps are not prefixed by a letter and there is no solid bar at the end to indicate the algorithm is complete.

6. If $m = 1$, E1 is executed 2 times, for $m = 2$ 3 times, for $m = 3$ 4 times, for $m = 4$ 3 times and for $m = 5$ once. The average is $\frac{(2+3+4+3+1)}{5} = \frac{13}{5}$.

7. When $n > m$, after the first iteration of E1, m and n will be swapped. Since, there are infinitely more cases where $n > m$, $U_m = T_m + 1$ assuming that average is *strongly* average, such that we can ignore how many times E1 is executed when $m \geq n$.