Build a Banner - Solution

1. \( t \ 4[s] \ T \ 3[t \ S] \)

2. One possible program is \( s \ T \ s \ T \ t \ S \ t \ S \).
   Another possible program is \( 2[s \ T] \ 2[t \ S] \).

3. \( 2[2[s \ S] \ t \ T] \)

4. \( 2[2[S] \ t \ 3[s \ T \ s]] \)

5. The small triangle instruction, \( t \), and the small square instruction, \( s \), should be moved outside of their repeating blocks. The correct program is \( 2[S \ T] \ t \ 2[T \ S] \ s \).

6. (a) No. The program draws this banner:

   (b) Yes
   (c) Yes
   (d) No. The program draws this banner:

   (e) Yes
   (f) No. The program is invalid and will not draw any banner. The first instruction is the new \( \text{if} \) instruction, but there is no previously drawn shape that it can use in order to make a decision about what to draw next.