Solutions to Section Handout #4

Problem 1. Differentiating the stack and the heap

1a) Diagram using explicit addresses:

1b) Diagram using arrows:

Problem 2: Pointer arithmetic

2a) $a1[1] \rightarrow 2001$
2b) $a2[2] \rightarrow 3.14159$
2c) $*a1 \rightarrow 1776$
2d) $*dp \rightarrow 1.61803$
2e) $*(dp + 1) \rightarrow 2.71828$
2f) $\&a2[3] - dp \rightarrow 3$
3. Pointer tracing

4. Heap-stack diagrams

4a. The following diagram uses explicit addresses, along with the internal numeric values of the *suit* enumerated type:

4b. This version eliminates addresses entirely and uses arrows to represent pointers. It also shows the *suit* constant names instead of their underlying values:
4b.

explicit addresses

arrow representation