For the examples that follow, assume the registers and memory are set up as follows.

Register 1 contains 3000

Memory Address Contents (word)
1000 Some word opcode | R1 | 2000 <-- The instruction to be executed
... 2000 4000
... 2FFC 88
3000 12
3004 73
... 4000 1234
... 5000 5678
... 14000 42

Direct (Absolute) mode - the instruction contains the address of the operand

In the above example, we would use the value at 2000 -> 4000

Memory Indirect (Deferred) mode - the instruction contains the address of a location in memory that contains the address of the operand

In the above example, since address 2000 contains 4000, we would use the value at 4000 -> 1234

Register Indirect (Register deferred) mode - the instruction specifies a register that contains the address of the operand

In the above example, since register 1 contains 3000, we would use the value at 3000 -> 12

Auto-increment - same as register indirect, but the register is incremented by the size of the operand after being used as address

In the above example, we would use the value at 3000 -> 12, and then register 1 would then be incremented to 3004 (since a word is 4 bytes long)

Auto-decrement - same as register indirect, but the register is decremented by the size of the operand before being used as address

In the above example, since register 1 contains 3000, we would use the value at 2FFC -> 88, and also register 1 would be decremented to 2FFC
Register + Displacement - the instruction specifies a register and a displacement, and these are added to determine the address of the operand

   In the above example, since register 1 contains 3000, we would use the value at
   \((3000 + 2000 = 5000) \rightarrow 5678\)

Indexed - the instruction specifies a register and a base address. The contents of the register is multiplied by the size of the item to be addressed, and this product is added to the base address to yield the address of the operand

   In the above example, since register 1 contains 3000, we would use the value at
   \((4 \times 3000 + 2000 = 14000) \rightarrow 42\)

PC Relative - the instruction specifies a memory location relative to the value in the program counter (which points to the next instruction)

   In the above example, we would use the value at \((1004 + 2000 = 3004) \rightarrow 73\)

Register - the instruction specifies a register that contains the value to be used

   In the above example, since register 1 contains 3000, we would use 3000

Immediate - the instruction contains the value to be used

   In the above example, we would use 2000