1 Register machine A - 2 points

We create a machine with 5 states and a stopping state and number the normal states 1 to 5. In every state, we decrease the value of register r_1 and go the next state (after state 5 we will go to state 1). If r_1 is equal to zero, we stay in the same state unless we are in state 3, then we go to the stopping state.
In this way, starting at state 1, we simply keep subtracting 5 and halt when we end at 2 in this way, giving us exactly what we want.

2 Register machine B - 1 point

The machine moves the value from r_1 to r_2. It decreases r_1 until it is zero and for every decrement, we increase r_2.

3 Register machine C - 4 points

First note that $\binom{x}{2}$ is equal to the x-th triangle number, so what we are going to do is add the value of r_1 to another register and then decrease r_1 after which we repeat the process.
One state will decrease the value in r_1, going to a special state s_{end} when it is zero and going to a copy state s_{copy} otherwise. The state s_{copy} will then copy the value of r_1 twice (while emptying r_1), once to a register r_2 and once to r_3. One of the copies will then be returned to register r_1, emptying one of the copy-registers. From then on, we will add the second copy register value to the answer-register r_4 after which we return to the starting state that controls r_1.
In this way, we keep track of the value of r_1, which we want to be decreased in every 'round', while still maintaining that value and adding it to r_4. Now state s_{end} will make sure (together with some other states) that registers r_1, r_2, r_3 are emptied.

4 Register machine D - 3 points

It computes 2^x. State s_a puts a 1 in register r_2 to be doubled, state s_0 decreases r_1 for every round of doubling r_2, the doubling happens in states s_1, s_2, s_3 and the states s_{c1}, s_{c2} move the doubled value to r_2 again.

5 How points are awarded

In every exercise, 1 point is awarded for a correct answer or a description of a machine that does the most important part of the computation. The other points are awarded for a good explanation of the answer and/or a detailed formal (or as precise as a formal) description.