EX:

```
function sys_out = conv_v(sys_in,imp_resp)


  sys_in2 = [sys_in, zeros(1,length(imp_resp)-1)];
  for ind = 1:length(sys_in);
    sys_out(ind) = sum(sys_in2(ind:ind+length(imp_resp)-1)...
                   .* imp_resp(end:-1:1));
  end
end
```

For the above Matlab® function, find the result of the following commands:

```
>> vin = [3, 2, 6, 2, 8, 0, 1];
>> h = [1, 0, -1];
>> vout = conv_v(vin,h)
```

SOL'N:

```
>> vin = [3, 2, 6, 2, 8, 0, 1];
>> h = [1, 0, -1];
>> vout = conv_v(vin,h)
vout =
     3     0     2    -2    -7     0    -1
Explanation:
 Inside the function, the input array (vin) is called sys_in2 and
gets
 % lengthened by adding two zeros.
sys_in2 =
     3     2     6     2     8     0     1     0     0
 Inside the for loop, three values at a time are extracted from the
  input array.  The first time through, we have
  sys_in2(ind:ind+length(imp_resp)-1) = [3, 2, 6]
 The imp_resp variable is h in reverse: imp_resp = [-1, 0, 1]
 The three values from imp_resp are multiplied element-by-element
with
  the three values extracted from vin and summed.
   sum([3, 2, 6] .* [-1, 0, 1]) = sum(-3, 0, 6) = 3
 The next time through the loop, vin is shifted one step to the
right, and
  the values extracted are [2, 6, 2], and the rest of the process is
carried
  out as above.
```