1. This circuit has three inputs: $v_1$, $v_2$ and $v_3$. The output of the circuit is $v_o$. The output is related to the inputs by

$$v_o = a \, v_1 + b \, v_2 + c \, v_3$$

where $a$, $b$ and $c$ are constants.

Determine the values of $a$, $b$ and $c$.

2. This circuit has two inputs: $v_1$ and $v_2$. The output of the circuit is $v_o$. The output is related to the inputs by

$$v_o = a \, v_1 + b \, v_2$$

where $a$ and $b$ are constants.

Determine the values of $a$ and $b$. 