The internal circuitry of the box might be as shown below. Inputs x and y each go to an A/D converter, the output of which is a 7-bit binary representation of the input voltage in millivolts. A decoder then translates this 7-bit word into two binary coded decimal (bcd) outputs, signifying the values of the two digits in the *decimal* representation of the input voltage. Two D/A converters then yield analog voltage representations of these. Thus, if $x = 21$ mV, then the output voltage of the upper 1st and 2nd decade D/A converters is 1mV and 2mV, respectively, and if $y = 36$ mV then the output of the lower 1st and 2nd decade D/A convereters is 6mV and 3mV, respectively. These votages are then summed to yield an output voltage at z whose value, in millivolts, is equal to the sum of the digits in the decimal represent-ations of the x and y inputs. Hence the voltage at point "?" in the diagram is 2+1+3+6 = 12mV.