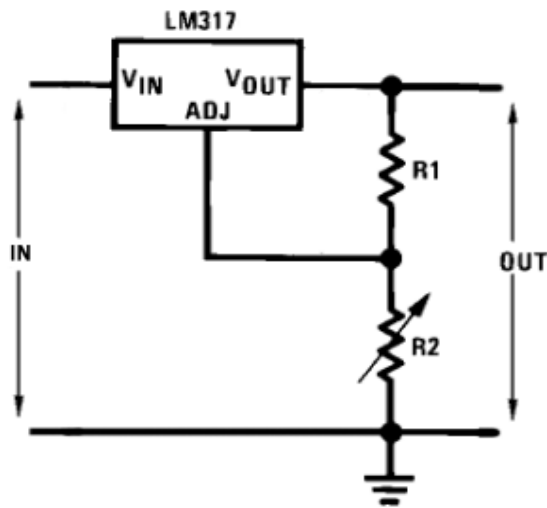# Answer on Question #65927 – Physics / Electric Circuits | Complete

Design and draw the circuit of a regulated power supply using LM 317 to provide 30V output.

Solution.

Classic circuit design of a regulated power supply for LM 317:

1. Calculating the ratio of the resistors values:

$$V_{out} = V_{ref}\left(1 + \frac{R_2}{R_1}\right) + I_{adj};$$

$$30 = 1{,}25\left(1 + \frac{R_2}{R_1}\right);$$

$$\frac{R_2}{R_1} = 23;$$

2. We can take any resistor R1 value from 100 Ohm to 1000 Ohm, and calculate the resistor R2

$$R_1 = 100\ Ohm;$$

$$R_2 = 100 * 23 = 23000\ Ohm = 23\ kOhm;$$

Answer

R1 = 100 Ohm;

R2 = 23 kOhm;