The current in a circuit is tripled by connecting a 649 Ω resistor parallel with the resistance of the circuit. Determine the resistance of the circuit in the absence of the 649 Ω resistor.

Correct answer: 1298 Ω.

In this problem assume
1 the batteries have zero internal resistance,
2 the currents are flowing in the direction indicated by the arrows. A negative current denotes flow opposite to the direction of the arrow.

Correct answer: 47.6 Ω.
What is the magnitude of the current $I_2$?

Correct answer: 0.784 A.

Find $I_3$.

Correct answer: 1.516 A.

A battery with an emf of 12.3 V and internal resistance of 0.43 Ω is connected across a load resistor $R$.

If the current in the circuit is 1.42 A, what is the value of $R$?

Correct answer: 8.23197 Ω.

What power is dissipated in the internal resistance of the battery?

Correct answer: 0.867052 W.