QUESTION:

what happens to light intensity of lamp in a series circuit when more lamps are added to the circuit

SOLUTION:

When lamps are added in a series circuit, the resistance of the circuit is

$$R = R_L + R_L + R_L + ... = N \cdot R_L$$

Here N is quantity of lamps added to the circuit

R_L is the resistance of one lamp.

Hence, according to the Ohm's law

$$I_L = \frac{U}{N \cdot R_L}$$

Here

U is voltage

I_L is current through the circuit.

Therefore, when we add lamps to the circuit, the resistance of the circuit increases, and the current through the circuit decreases, so lamps will glow less brightly.

ANSWER:

Lamps will glow less brightly