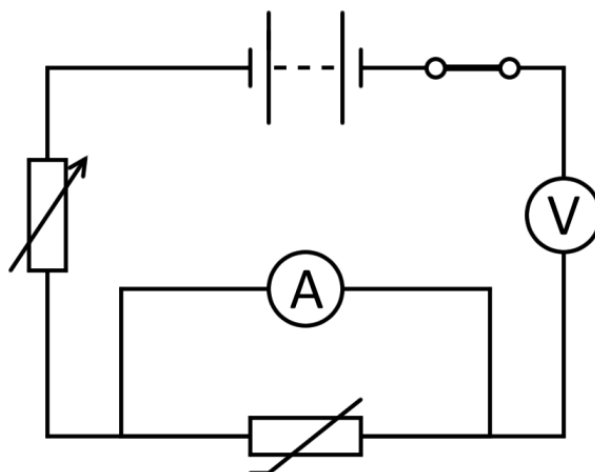


Name:

Class:



A student investigates how the resistance of a thermistor varies with temperature. The student sets up the circuit shown in the figure below to measure current and voltage. He finds that it does not work.



Give **three** modifications the student should make to the circuit so that the circuit works correctly.

1. Connect ammeter in series (with thermistor).
2. Connect voltmeter in parallel (with thermistor).
3. Reverse (connections for) one of the cells.

Fuel weighing 230 000 N is pumped into an aircraft. This fuel moves upwards through a vertical height of 4.7 m. The power developed by the pump is 1600 W. Calculate the time needed to refuel the aircraft.

$$E = \text{weight} \times \text{height} = \text{power} \times \text{time}$$

$$\text{time} = \frac{(\text{weight} \times \text{height})}{\text{Power}}$$

$$\text{time} = \frac{(230\,000 \times 4.7)}{1600}$$

$$\text{Time} = \mathbf{680\, (s)}$$

A fuel supplies a total of 8000 kJ of energy every minute to an engine. The efficiency of the engine is 0.70. Calculate the power output of the engine.

$$0.7 = \text{useful} \div 8000\, \text{kJ}$$

$$\text{useful} = 0.7 \times 8000 = 5600\, \text{kJ}$$

$$\text{Power} = 5600 \div 60$$

$$\text{Power} = \mathbf{93.3\, \text{kW or } 93000\, \text{W}}$$

In the space below draw the electrical symbol for a thermistor.



State **one** use of a thermistor.

Home heating or fire alarm systems.