**Fuels Lab**

**Purpose**

* to determine which fuel is more efficient

**Question**

* How should we define efficiency?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hypothesis**

If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials**

|  |  |
| --- | --- |
| * 3 different fuels | * wire mesh |
| * stand | * O ring |
| * beaker | * water |
| * matches | * wooden splints |
| * graduated cylinder | * thermometer |
| * balance | * tongs |
| * pipet | * stopwatch |

**Your fuel** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Method**--labeled sketch AND heat for 5 minutes

**Observations**

**Analysis**

**Calculations**

i) Heat energy absorbed by the water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii) Heat energy released by the fuel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii) mass of fuel burned \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iv) heat energy released by the fuel per gram of fuel burned \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Class averages**

|  |  |  |
| --- | --- | --- |
| **Methanol** | **Candle Wax** | **Ethanol** |
|  |  |  |

**Conclusion**

The\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the most efficient because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question**--If we burnt 25.0 g of the most efficient fuel how much heat energy would be released?