**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?