

Introduction to Chemistry Practice Problems

1. Identify each type of investigation as an example of pure research or applied research.

- A researcher analyzes the composition of Saturn's atmosphere.
- A researcher improves the fuel efficiency of a combustion engine.
- A researcher works on ways to improve the agricultural yield of an acre of corn
- A researcher examines the unique crystalline structure of snowflakes.

2. Match each activity to one of the five areas of chemistry. (Organic, inorganic, biochemistry, physical, analytical)

- Determining the energy transferred when water reaches the boiling point
- Finding out how much water vapor is in a sample of air
- Studying the conversion of light energy into chemical energy during photosynthesis in plants
- Manufacturing polyester, which contains carbon
- Studying crystals of the mineral quartz
- Performing quality control during the manufacturing of Advil
- Explaining how the speed of a reaction can be increased by adding a catalyst
- Studying the clotting mechanism of blood

3. Identify each piece of data as either qualitative (descriptive) or quantitative (numerical).

- Blue
- 150 pound
- 110° C
- Round
- Smells like roses
- 35 mph
- Hot