Experiment with sums and products of two numbers from the following list to answer the questions that follow:

$$5, \frac{1}{2}, 0, \sqrt{2}, -\sqrt{2}, \frac{1}{\sqrt{2}}, \pi.$$

Based on the above information, conjecture which of the statements is ALWAYS true, which is SOMETIMES true, and which is NEVER true?

a. The sum of a rational number and a rational number is rational.

b. The sum of a rational number and an irrational number is irrational.

c. The sum of an irrational number and an irrational number is irrational.

d. The product of a rational number and a rational number is rational.

e. The product of a rational number and an irrational number is irrational.

f. The product of an irrational number and an irrational number is irrational.