RATIONAL

TENTATIVE

EXPLANATORY

PREDICTIVE

TESTABLE

SELF-CORRECTING

COLLABORATIVE

Scientific ideas must stand or fall on their own merits, based on a proper consideration of evidence and arguments.

In pseudoscience, we often see (1) extraordinary claims without extraordinary evidence and (2) fallacious reasoning.

Scientific beliefs are tentative and provisional (subject to change with new evidence). Scientific beliefs may be questioned or rejected at any time.

In pseudoscience, major tenets and principles are often unchanging, unfalsifiable, and accepted on faith (rather than on the basis of rigorous testing).

Science is explanatory. Its primary goal is to achieve a more complete, objective and unified understanding of the physical world.

Pseudoscience is often driven by ideological, cultural or commercial goals.

Scientific experiments involve specific predictions about observable phenomena.

Science involves rigorous and systematic testing of theories, using repeatable methods.

Scientific experiments involve manipulating a factor (while controlling other variables) to see how that affects the outcome.

A scientific hypothesis yields testable implications that are inconsistent with rival hypotheses.

Pseudoscience fails to properly test theories. Testing may be unrepeatable; or it may be arranged so that the theory can only be confirmed, never disconfirmed.

Scientists actively seek out counter-examples or findings that appear to be inconsistent with accepted theories.

Credible observations that are not consistent with current scientific understanding generate intense interest and stimulate further research.

In pseudoscience, observations or data that are not consistent with established beliefs tend to be disregarded or suppressed.

Science is collaborative.
It relies on peer review, scholarly publication processes and collaboration with a community of peers.

In pseudoscience, there is often an attempt to bolster claims through a cult of personality or an appeal to spurious authority.