

Astronomy 102A

Homework 0: A Philosophical and Historical Introduction to Astronomy Not to be handed in.
Homework solutions are posted already.

000 qmult 00100 1 1 4 easy memory: scientific method

Extra keywords: physci KB-24-1 but much altered

1. The scientific method can be schematically described as:

- a) an inward spiral of theorizing and experiment/observation. b) an integrative process.
c) a reductive process. d) a cycle of theorizing and experiment/observation. e) a pointless pursuit.

SUGGESTED ANSWER: (d)

Wrong answers:

- b) Say what?
c) Say what?
e) As Lurch would say: “Aaaarh.”

Redaction: Jeffery, 2001jan01

000 qmult 00130 1 4 5 easy deducto-memory: art/science

2. “Let’s play *Jeopardy!* For \$100, the answer is: A human pursuit which has no absolute standard (although personal or local standards are common and probably essential) that, among other things, tries to extend human understanding and to give pleasure, sometimes of a very qualified sort.”

What is _____, Alex?

- a) a science b) nonsense c) geology d) of no conceivable use e) an art

SUGGESTED ANSWER: (e)

Wrong answers:

- a) This is as exactly wrong as a sort of philosophical question will admit of.

Redaction: Jeffery, 2001jan01

000 qmult 00210 1 4 4 easy deducto-memory: fundamental in physics

3. “Let’s play *Jeopardy!* For \$100, the answer is: ‘Just so’ in physics.”

What is _____, Alex?

- a) a single story by Rudyard Kipling b) essential c) eternal d) fundamental
e) infernal

SUGGESTED ANSWER: (d)

Wrong answers:

- a) There were several *Just So Stories*.

Redaction: Jeffery, 2001jan01

000 qmult 00220 1 4 2 easy deducto-memory: applied physics astronomy

4. Astronomy can be described as:

- a) the sum totality of physics. b) a field of applied physics. c) other than physics.
d) fundamental physics. e) indifferent to physics.

SUGGESTED ANSWER: (b)

Wrong answers:

- d) Exactly wrong.
e) As Lurch would say: “Aaaarh.”

Redaction: Jeffery, 2001jan01

000 qmult 00240 1 4 3 easy deducto-memory: true approximate theory

5. Newtonian physics can be described as:

- a) modern day fundamental physics. b) an exactly true theory c) a true approximate theory.
d) a false approximate theory. e) both false and true.

SUGGESTED ANSWER: (c)

Wrong answers:

- e) As Lurch would say: “Aaaarh.”

Redaction: Jeffery, 2001jan01

000 qmult 00310 1 4 5 easy deducto-memory: physical sciences

6. The following are usually considered physical sciences:

- a) proctology, theosophy, and Deuteronomy. b) proctology, immunology, and biology.
c) proctology, geology, and biology. d) chemistry, geology, and biology. e) chemistry,
geology, and meteorology.

SUGGESTED ANSWER: (e)

Wrong answers:

- a) As Lurch would say: “Aaaarh.”
c) Proctology is a very important science—but not one that can be discussed in polite society.

Redaction: Jeffery, 2001jan01

000 qmult 00330 2 4 1 moderate deducto-memory: entropy emergent

7. It is believed by many physicists that the 2nd law of thermodynamics would _____ in other universe domains with different true fundamental physics than that of our own universe domain.

- a) hold b) not hold c) be impossible d) be infernal e) be notorious

SUGGESTED ANSWER: (a) The 2nd law is can be thought of as an emergent principle even though it is usually considered just part of physics—at least in the instructor’s view—and for the duration of this course that view prevails.

Wrong answers:

- e) As Lurch would say: “Aaaarh.”

Redaction: Jeffery, 2001jan01

004 qmult 00010 1 1 1 easy memory: astronomy oldest science

8. Astronomy is often cited as the:

- a) oldest exact, empirical science. b) youngest exact, empirical science. c) oldest inexact, empirical science. d) youngest, inexact, colonial science. e) oldest form of folklore.

SUGGESTED ANSWER: (a) Calling astronomy this actual requires careful definition of terms to be exactly right—but who cares about being exactly right: the way we usually talk, it is more right than saying anything else.

Wrong answers:

- b) Never ever.
e) I'm just not accepting this answer.

Redaction: Jeffery, 2001jan01

004 qmult 00020 1 1 5 easy deducto-memory: neolithic astronomy

9. Moon-shaped cut marks on bones in groupings of order 30 from neolithic times (as long ago as 36,000 BCE) suggest that people then were doing astronomy by:
- a) whiling away the time. b) counting sheep. c) wittling. d) counting fingers and toes.
e) counting days of the lunar month.

SUGGESTED ANSWER: (e) See No-xxiv and Cox-16.

Wrong answers:

- a) As Lurch would say: "Aaaarh."

Redaction: Jeffery, 2001jan01

004 qmult 00090 1 4 3 easy deducto-memory: alignment astronomy

10. "Let's play *Jeopardy!* For \$100, the answer is: Stonehenge and many other prehistoric monuments suggest that the makers were doing this."

What is _____, Alex?

- a) special relativity calculations b) orbital physics c) simple alignment astronomy
d) casting horoscopes e) receiving alien visitors from outer space.

SUGGESTED ANSWER: (c)

Wrong answers:

- e) As Lurch would say: "Aaaarhhh."

Redaction: Jeffery, 2001jan01

004 qmult 02010 1 4 5 easy deducto-memory: Aristotelian cosmic dogma

11. "Let's play *Jeopardy!* For \$100, the answer is: A cosmology became something of a philosophical dogma in Greco-Roman Antiquity, the Medieval Islamic and European societies, and in Europe up until the 17th century."

What is _____, Alex?

- a) Democritean cosmology b) Newtonian cosmology c) big bang cosmology d) inflation cosmology
e) Aristotelian cosmology

SUGGESTED ANSWER: (e)

Wrong answers:

- a) Democritus (circa 460–360 BCE) had interesting atomist cosmology that unfortunately was still flat-Earth.

Redaction: Jeffery, 2001jan01

004 qmult 03000 1 4 2 easy deducto-memory: unified terrestrial/celestial

12. Newtonian physics unified:

- a) thermodynamics and special relativity. b) terrestrial and celestial physics. c) terrestrial and substantial physics. d) terrestrial and Martian physics. e) talking and walking physics.

SUGGESTED ANSWER: (b)

Wrong answers:

- e) As Lurch would say: “Aaaarh.”

Redaction: Jeffery, 2001jan01