

NAME: \_\_\_\_\_

**Philosophy 1104: Critical Thinking**

**Answers to Quiz #2**

1. In which of the following pairs of propositions does *A* provide *conclusive* evidence for *B*? Also say whether or not *A* provides at least *some* evidence, even if rather weak (i.e. say whether *A* is *positively relevant* to *B*). Write just ‘Yes’ or ‘No’ in each column provided. [10 marks]

	<i>A</i>	<i>B</i>	Conclusive evidence?	Some evidence?
(i)	Some women play golf	Bolivia has no coastline	No	No
(ii)	Ghosts really exist	Mike has seen a ghost	No	Yes
(iii)	Rome is due north of Tripoli	Tripoli is due south of Rome	Yes	
(iv)	Some chimpanzees drive cars, from time to time.	Some car drivers are chimps.	Yes	
(v)	Mike is 6’ 9” tall	Mike played basketball in high school	No	Yes
(vi)	Someone from my town won the lottery last week	This week’s lottery winner won’t be from my town	No	No
(vii)	Alice is Canadian	Alice has never watched a hockey game	No	No
(viii)	The flight took off 20 minutes behind schedule.	The (same) flight will land behind schedule.	No	Yes
(ix)	According to legend, Julius Caesar was born by C-section	Julius Caesar was born by Caesarean (C) section	No	Yes
(x)	Only 2% of women quilt	Most quilters are men	No	No

2. Each of the following definitions is flawed in some way (each in just one way, I think, or at least one main one). Diagnose each definition as “circular”, “too narrow”, “too broad”, or “loaded”.

(i) I define a *religion* as something that brings people together for a common purpose.

too broad (bowling also does this)

(ii) When I say *abortion* I’m talking about the murder of an unborn child.

loaded (the term ‘murder’ entails that abortion is *immoral*)

(iii) *Physics* is the study of atoms and sub-atomic particles.

too narrow

(iv) The *Gross Domestic Product* is defined as the gross amount that is produced domestically.

circular

(v) *Intelligent design*, or ID, is the unscientific idea that everything was planned by some sort of cosmic control freak.

loaded

(vi) A *disabled* person is a person with some kind of disability.

circular

(vii) An *automobile* is a “womb with a view”, a protective shell for pampered babies who can’t cope with a little cold and wet weather.

loaded

(viii) An *automobile* is, literally, something that moves under its own power.

too broad (every animal does that)

3. Based on the text below, identify briefly any indications, *available at the time*, that the former consensus that childbed fever isn't contagious was possibly not well founded. Note that these indications may not be explicitly stated in the text, but can be inferred. [5 marks]

During the 18<sup>th</sup> century, doctors found that delivering babies was lucrative work and by the mid 19<sup>th</sup> century hospital births attended by physicians had become common. However, women giving birth in hospitals died at a much higher rate of "childbed fever" than those delivering at home with midwives. Childbed fever presented with a wide range of symptoms, so most physicians believed it to be a cluster of diseases, having no single cause, and these various causes were believed to be mechanical, according to the prevailing conception of the human body as a machine full of pumps, piping, filters, etc. (On the other hand, the germ theory of disease was largely unknown.) In some mothers, for example, childbed fever was ascribed to viscous blood, leading to blockage. A number of physicians, however, including Semmelweis in Austria and Gordon in the UK, independently came to the view that childbed fever is contagious, and spread largely by doctors carrying invisible particles on their hands from one mother to another, or from dissected corpses to mothers. These physicians could not explain how such miniscule amounts of matter (on hands that had been scrubbed with soap) could cause disease, but reported that death rates in their clinics dropped dramatically after doctors began washing their hands in chlorinated lime solution. Semmelweis also noticed that the clinic in Vienna where doctors were trained (partly by dissecting corpses) had a much higher rate of disease than another clinic where midwives were trained. These ideas were however scorned and ridiculed by the medical profession. For one thing, the alleged cause seemed too simple to explain the variety of symptoms. Also, postulating an unknown, unobservable cause of disease seemed unscientific, and most doctors found it absurd that such a tiny amount of material could cause so virulent an illness. Finally, the idea of frequent hand washing made little sense to busy surgeons who were proud of their blood- and pus-stained frock coats, and for whom a concern for cleanliness seemed fussy and prudish. One well-known obstetrician stated indignantly, "Doctors are gentlemen, and gentlemen's hands are clean."

1. Hard for doctors to think they're killers
  2. Cultural bias against hand washing
  3. Empirical evidence for contagion
  4. Many doctors argue for contagion
  5. Rejection of contagion driven by machine paradigm, not data.
4. Underline words or phrases in the following sentences if they are approximate/vague, and wavy underline words or phrases that make the statement hesitant/probable. [1 mark each]
- (i) (After firing City planning director Brent Toderian, Mayor Robertson was pressed on the reasons for the firing, and replied,) "This really was about looking forward."
  - (ii) You will have some degree of pain after the operation.
  - (iii) Scientists say there's a link between autism and the MMR vaccine.
  - (iv) These chunks are supposedly eggplant.
  - (v) Taking this course might affect your GPA.

5. Explain how the dispute below *might*, at least, be merely verbal. [3 marks]

Did you hear about the case of Betty Anane in Connecticut, who was arrested for “risk of injury to a minor”? All she did was let her kids aged 11 and 7 walk half a mile by themselves, along a quiet residential street, to buy pizza. What a freakin’ joke! You can’t call that a “risk of injury”!

- Sure there’s a risk of injury there. Those kids could have gotten run over, or been abducted by a child molester. Without an adult to care for them, *anything* could have happened!

It does look evaluative, but it could be just that the first speaker means a *substantial* or significant risk of injury, whereas the second means any risk, no matter how tiny.

6. Is the disagreement below merely verbal? If not, then describe the underlying substantial disagreement, saying whether it is factual, or interpretative, or evaluative. [N.B. Assume that everyone has seen a bike helmet before, and knows what it is.]

Why do you wear that styrofoam hat when you ride your bike on quiet trails, even under the hot sun? You must get very sweaty.

- It’s not a ‘styrofoam hat’, it’s a *helmet*.

Evaluative. The term ‘styrofoam hat’ is intended to devalue the helmet’s usefulness. In effect the first speaker is saying that it’s silly or pointless to wear one in this case.

7. Identify the following substantial disagreements as factual, interpretative or evaluative. [2 marks each = 8 total]

- (i) The earth has been getting warmer for over the past 200 years, mainly due to rising CO<sub>2</sub> levels in the atmosphere.

- It’s true that the earth is getting warmer, but I doubt that CO<sub>2</sub> is a major factor. For one thing, the present warming trend began long before the CO<sub>2</sub> level rose.

Interpretative

- (ii) You religious types have always been against science. You know, like Galileo being tortured by the Inquisition and burned at the stake.

-- Galileo wasn't tortured, or burned at the stake. He was found guilty of being "suspect of heresy" and placed under house arrest, in his comfortable villa.

Factual

- (iii) Turkey has finally made it, as a developed, industrialised nation. It now boasts the 15<sup>th</sup> largest GDP in the world, and Istanbul is home to 30 billionaires, the same as London.

-- "Made it", you say! I disagree. Nowadays many Turks are becoming obsessed with money, clothes and cars. I think the country is in danger of losing its soul.

Evaluative

- (iv) What really gets me about these bike lanes in Vancouver is that it's all paid for by drivers like me, through our fuel taxes and parking fees. Bikers are freeloaders.

-- That's not true. Fuel taxes help to pay for major highways, but not local roads and bike lanes. Those are funded by property taxes, which bikers pay like everybody else.

Factual

8. The text below is a response by paleoclimate scientist Michael Mann to a report that was critical of his work. The report, written at the request of U.S. Rep. Joe Barton by three eminent statisticians, found fault with his statistical methods and also said that the tight relationships among paleoclimate researchers could lead one to suspect that the peer review process does not fully vet papers before they are published.

Highlight (or outline) and number 5 places where Dr. Mann *attacks the authority* of the statisticians. (If two or more attacks are very closely related, then count them as one.) In the spaces provided, briefly indicate the nature of each attack, e.g. bias, poor track record, lack of suitable expertise, lack of independent verification, lack of honesty, or contradiction by another authority. [10 marks]

- (i) not supported by other experts
- (ii) lack of suitable expertise
- (iii) lack of due diligence, (parroting biased sources)
- (iv) contradicted by other authorities
- (v) bias

The un-peer reviewed Barton report released today adds nothing new to the scientific discourse on climate change and is a poor attempt to further personalize and politicize what should be a matter of scientific debate not politics ...

The Barton report, written by statisticians with no apparent background at all in the relevant areas, simply uncritically parrots claims by two Canadians (an economist and an oil industry consultant) that have already been refuted by several papers in the peer-reviewed literature inexplicably neglected by Barton's "panel". These claims were specifically dismissed by the National Academy in their report just weeks ago. Barton's report also reveals that his panel collaborated closely with the two Canadians, yet made no attempt to contact me or my collaborators at any point.

The panel makes the odd claim that there is "too much reliance on peer-review" which goes against every principle of current scientific practice. Barton in his 'factsheet' goes further and suggests that the anonymous peer reviewers themselves are in some way biased, a claim that he cannot possibly support since peer reviewers are in fact anonymous and this was not studied in the report.

Climate science, like many multidisciplinary fields, requires broad collaboration with researchers across many areas. Any well published scientist would show a wide-ranging pattern of connection with other researchers in the field. While I am flattered that the committee seems to think that I am at the center of the field, the same analysis would have shown a very similar pattern for any researcher engaged in widespread interdisciplinary research.

My colleagues and I continue to work on reducing the uncertainties in past climate reconstructions and understanding the mechanisms of past and current climate change. Policy-makers should more constructively focus their attention on the consensus findings on climate change as presented by the Intergovernmental Panel on Climate Change (IPCC) and the National Academies of all G8 countries, rather than on pursuing politically-motivated attacks against individual scientists.