

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

**Philosophy 1104: Critical Thinking**

**Answers to Practice Quiz #4**

1. Say whether each of the following passages contains an *argument* or an *explanation*. If it contains an argument, then write the argument in standard form. (In this exercise *do not* add any unstated premises.) If the passage contains an explanation, then identify the *cause(s)*, and the *effect* being explained. [3 marks each]

- (i) I think this year's Canucks will do alright. Even without Luongo and half their usual forwards, they're playing with confidence and have eked out a few wins.

**Argument**

1. Even without Luongo and half their usual forwards, this year's Canucks are playing with confidence and have eked out a few wins.

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This year's Canucks will do alright

- (ii) The main reason why land-based temperature readings have shown warming over the past century is the "urban heat island" effect. Weather stations are located in cities, where the land has been increasingly covered with blacktop, which absorbs more solar energy.

**Explanation**

Causes: 1. Weather stations are located in cities  
2. City land has been increasingly covered with blacktop

Effect: Land-based temperature readings have shown warming over the past century

- (iii) How did Rachel Carson come to write *Silent Spring*? It started with the USDA's 1957 fire ant eradication program, which the Audubon Society actively opposed. The Society recruited Carson to help make public the government's exact spraying practices and the related research. Carson began the four-year project of what would become *Silent Spring* by gathering examples of environmental damage attributed to DDT.

## Explanation

- Causes:
1. the USDA's 1957 fire ant eradication program
  2. Audubon Society actively opposed the program
  3. Audubon Society recruited Carson ...

Effect: Rachel Carson wrote *Silent Spring*.

- (iv) Sure, they keep finding new oil fields, but they're just tiny compared to the massive finds of the past. Ghawar, the biggest of all, was discovered in 1948. Nowadays they are discovering just 10 billion barrels a year, compared to 55 billion a year back in the 1960s. There's no doubt that we're running out of oil.

## Argument.

The new oil fields found are tiny compared to the massive finds of the past

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we're running out of oil.

2. Put the following arguments into standard form. In this exercise *do* add any unstated premises or conclusion, in parentheses. (Watch out for sarcasm – write down what the person really means!) [4 marks each]
- (i) Oh sure, we need more safety regulations. Let's wrap ourselves up so tight with red tape that it's impossible for anyone to get hurt! If we do that, then of course there'll be no need to develop any skill or competence, and we'll turn ourselves into thoughtless, clumsy idiots. But I'm sure it'll be worth it.
1. If we have more safety regulations then there'll be no need to develop any skill or competence.
  2. In that case we'll turn ourselves into thoughtless, clumsy idiots.
  - (3. This will not be worth it.)
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- (We should not have more safety regulations.)
- (ii) The main reason the economy collapsed is that there are too many smart people on Wall Street. I know people will say it was due to greed, or lack of regulation, but those problems have been around for some time without causing such devastation. What's new is that the physics geniuses from MIT and CalTech starting going to Wall Street instead of grad school. They are the ones who invented all this financial voodoo like credit default swaps.

1. Greed and lack of regulation have been around for some time without causing devastation.
2. Recently, geniuses starting going to Wall Street instead of grad school.
3. These geniuses invented all this financial voodoo like credit default swaps.
- (4. Financial voodoo caused the financial collapse.)

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The main reason the economy collapsed is that there are too many smart people on Wall Street

3. Paraphrase the following sentences into one of Aristotle's forms (A, E, I and O) from the square of opposition. [2 marks each]

- (i) It's just not true that every religious person is dogmatic.

Some religious people are not dogmatic things

- (ii) The fact is that there just aren't any good pubs in Vancouver.

No good pubs are things in Vancouver

- (iii) There are tall women who date short men.

Some tall women are things that date short men

- (iv) Of all the many species on earth, only humans can play the piano well.

All things that play piano well are humans

4. For each of the following sentences, write down anything that is not strictly stated, but is suggested by conversational implication. [2 marks each]

- (i) Everyone other than Fred passed the exam.

Fred did not pass the exam

- (ii) If your GPA drops below 3.6 then you will lose your scholarship.

If your GPA stays above 3.6 then you will keep your scholarship.

(iii) Did you get an 'A' on your exam? Well, I can tell you that you *passed* at least.

You did not get an 'A'

(iv) A fever is nothing to worry about, unless you also have a bad sore throat.

A fever with a bad sore throat is something to worry about.

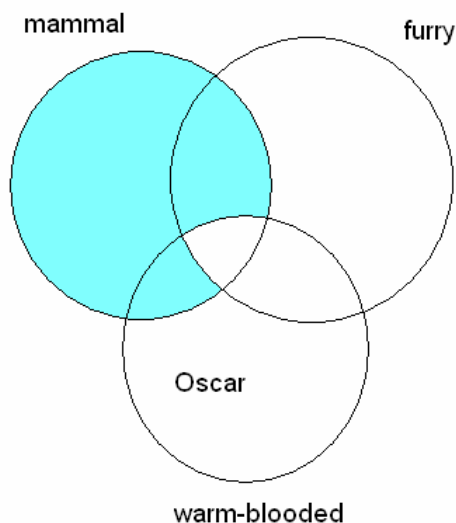
5. For each of the following arguments, *say whether or not it is valid*. (I.e. don't worry about whether or not the premises are acceptable.) If it is valid then provide a proof, or draw a Venn diagram showing what the premises tell us. If it is invalid then describe a situation where the premises are all true but the conclusion is false. [3 marks each]

(i) All mammals are both furry and warm-blooded. Now Oscar is warm-blooded all right, but he isn't furry. So Oscar isn't a mammal.

Valid.

*Proof:*

Suppose, for reductio, that Oscar is a mammal. Then from P1 we infer that he is furry and warm-blooded. But P2 say that Oscar isn't furry, which is a contradiction. Hence the reductio assumption is false, i.e. Oscar isn't a mammal. ■

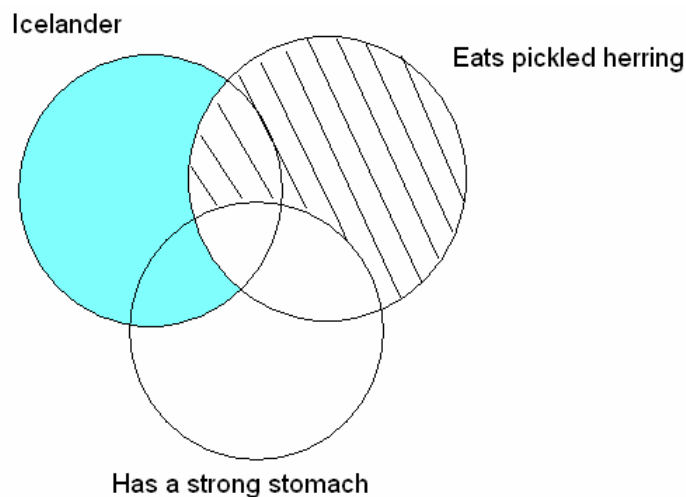


- (ii) Every Icelander eats pickled herring. And no one who doesn't have a strong stomach can eat pickled herring. So all Icelanders have strong stomachs.

Valid.

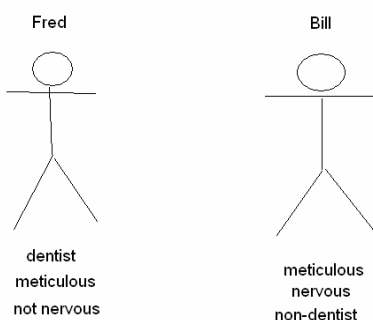
*Proof.*

Let Hreidur be an arbitrary Icelander. Then, from P1, we see that Hreidur eats pickled herring. But P2 is equivalent to the claim that everyone who eats pickled herring has a strong stomach, so we infer that Hreidur has a strong stomach. Thus we have shown that an arbitrary Icelander has a strong stomach, and hence we conclude that all Icelanders have strong stomachs. ■



- (iii) All dentists are meticulous, and some meticulous people are also nervous, so some dentists are nervous.

Invalid. Suppose, for example, that the world consists of just Fred and Bill, shown below. Then the premises are true and the conclusion is false.



6. For each of the following arguments identify the *type* of inference (modus ponens, affirming the consequent, modus tollens, denying the antecedent, or a disjunctive argument) and say whether or not it is deductively *valid*. [Note that valid conclusions are *conclusively proved* by the premises, not just supported to some extent.] [2 marks each]

- (i) Of course I have a soul. A purely physical being, lacking a soul, cannot be conscious, and I know I'm conscious!

Type: modus tollens

Valid? Yes

- (ii) It's clear that the recession is over. If the recession is over we will see increases in building permit applications, and that's happening right now.

Type: affirming the consequent

Valid? No

- (iv) Jen isn't an expert on Canadian history. Someone with a Ph.D. on the subject is an expert, of course, but Jen doesn't have a Ph.D.

Type: Denying the antecedent

Valid? No