

Introduction

The web site **Critical Thinking Web** (<http://philosophy.hku.hk/think/>) contains many exercises with answers. Here are some additional exercises which teachers can use in their classes. We apologize for the fact that no model answers are currently available. But if you find them useful or if you have any feedback, do send us an email at jyflau@hku.hk.

Thank you.

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I. What is critical thinking?

1. A challenge to critical thinking?

This is a passage from the management bestseller *In Search of Excellence* by Peters and Waterman:

If you place in a bottle half a dozen bees and the same number of flies, and lay the bottle horizontally, with its base (the closed end) to the window, you will find that the bees will persist, till they die of exhaustion or hunger, in their endeavour to discover an opening through the glass; while the flies, in less than two minutes, will all have sallied forth through the neck on the opposite side. ... It is the bees' love of flight, it is their very intelligence, that is their undoing in this experiment. They evidently imagine that the issue from every prison must be where the light shines clearest; and they act in accordance, and persist in too-logical action. To bees glass is a supernatural mystery. ... And, the greater their intelligence, the more inadmissible, more incomprehensible, will the strange obstacle appear. Whereas the featherbrained flies, careless of logic ... flutter wildly hither and thither, and meeting here the good fortune that often waits on the simple ... Necessarily end up by discovering the friendly opening that restores their liberty to them (Peters and Waterman, 1988, p. 108).

Some people think that the example in the passage shows that logical thinking is a bad thing. Do you think the example succeeds in establishing such a conclusion? Why or why not?

2. Is critical thinking really useful?

Discuss these remarks and explain whether you think they are correct or not.

- We often have to make decisions very quickly without a lot of time for us to think.
So critical thinking is not really that useful.
- Many people do not like to be criticized. So critical thinking is not very useful when it comes to dealing with these people.
- Emotions are very important in our lives but they are not rational. It is not worth giving up our emotions order to be a good critical thinker.

II. Meaning analysis

3. Explaining differences in meaning

For each set of statements below, determine whether they have the same truth-conditions. In other words, determine whether there is any situation where one of them is true and the others are false.

- Everybody is innocent until proven guilty.
Nobody is guilty until proven to be not innocent.
- You must not sign the document.
It is not the case that you must sign the document.
- There are many restaurants in Paris, and Maxim is the best.
No restaurant in Paris is better than Maxim.
- Do not say anything in case the ICAC is present.
Do not say anything if the ICAC is present.
- Manufacturer: We do not add preservatives to our food.
Manufacturer: Our food contains no preservatives.
- If any of the o-rings is broken, the space shuttle will explode.

If every o-ring is broken, the space shuttle will explode.

- We are going to invite interesting parties to apply to the scholarship.
We are going to invite interested parties to apply to the scholarship.
- Don't be evil. (Google's motto)
Be good.
- Beckham is a famous soccer player.
Beckham is famous and Beckham is a soccer player.
- Jesus knew that Judas was going to betray him.
Jesus thought that Judas was going to betray him, and Jesus was right.

4. Conversational implicature

It is thought by many people that 'some Xs are Ys' implies that not all Xs are Ys. In other words, it is supposed to be part of the meaning of the sentence 'some judges are men' that not all judges are men. How would you show that this is not the case? Can you show that the implication is not part of the literal meaning but only the conversational implicature?

5. Identifying ambiguity

If any statement below is ambiguous, list all its possible interpretations.

- Put the book on the table by the window in the bedroom.
- The policemen were told to stop drinking at midnight.
- New chief vows to avoid drastic changes while reviewing much-criticised reforms.
[SCMP caption 28 June 2002]
- I wrote a poem once about a great encounter I had with a deer early in the morning
that was very moving. [US Presidential candidate John Kerry *New York Times*
March 7th 2004.]
- For sale - ten puppies from an Australian terrier and a Boston terrier.
- Visiting relatives can be boring.

6. Simplify

See if you can simplify these sentences, such as by changing passive voice into active voice, eliminating unnecessary words or using simpler words and grammar. Many of these

examples are adapted from actual student writing.

- All real life creatures share one common goal which is strive for survival of their own selves.
- Talking to Ann has induced Peter to generate the idea of building a house.
- The educational system at the moment is predicated on the assumption that lectures are enjoyed by students.
- For Tom to take preparatory steps to set up a new competing firm while using official time spent in the company that employs him amounts to a serious breach.

III. Definitions

7. Definitions: method of genus and differentia

Use the method of genus and differentia to give definitions for these terms the best you can. For each definition, identify the part that corresponds to “genus” and the part that corresponds to “differentia”:

- air-conditioner, piano concerto, gambling, coward, tennis, spoon, ethics

8. Evaluating definitions

Evaluate these definitions and see if they have any problems. Some of them may have more than one problem.

- X leads a meaningful life = X leads a life pursuing aims that are recognized to be important by the members of X's community.
- A diamond is the hardest substance on earth.
- A brave man is one who does not run away from danger.
- A cloud is a large semi-transparent mass with fleecy texture suspended in the atmosphere whose shape is subject to continual and kaleidoscopic change.
- Truth = what you can defend against all criticisms.
- Hatred = the wish to harm others or to ruin something that belongs to or is dear to others.

9. Quotations about love

Evaluate these quotations construed as definitions of love.

- Love is the irresistible desire to be irresistibly desired. - Mark Twain
- Love is the master key that opens the gates of happiness. - Oliver Wendell Holmes
- Love is an ideal thing, marriage a real thing. – Goethe
- Love is the affinity experienced between two people who are naturally able and willing to tune into one another's emotional, intellectual, and physical states - and respond to them in a nurturing and a stimulating way. - biomatch.com

10. Original meaning

Anything wrong with these arguments?

- “Philosophy” originally means love of wisdom in Greek. If you are a philosopher, you must have a lot of wisdom.
- “Art” originally means “to make”. So art is created whenever someone makes something.

11. A definition game

Divide the students into two groups. One group identifies an object in the room (e.g. chair, mobile phone) and asks the other group to provide a definition. The first group is responsible for criticizing the definition and the second group will continue to modify the definition to deal with objections from the first group.

12. Intension and extension

Are these statements true or false?

- James Joyce belongs to the extension of the term ‘famous Irish writer’.
- James Joyce is part of the intension of the term ‘famous Irish writer’.
- If two terms have exactly the same meaning, then their intensions are the same.
- If two terms have exactly the same intension, then their extensions are the same.
- In a *genus-differentia* definition, the extension of the *genus* is larger than the extension of the *differentia*.

13. Evaluating definitions

- Insider trading is a crime in most countries. What is wrong with the definition of insider trading as trading in the shares or bonds of a company that relies on information about the internal workings of the company?
- Discuss this definition of ‘sexual abuse’: To sexually abuse a person is to do something to that person that is related to sex and which is unpleasant to that person.

See if you can improve these definitions if they are objectionable.

IV. Necessary and sufficient conditions

14. Definitions and necessary and sufficient conditions

Suppose we have a definition $X = Y$. Are the statements correct about this definition? Why or why not?

- If the definition is too wide, then X is not necessary for Y.
- If the definition is too wide, then Y is not necessary for X.
- If the definition is too narrow, then X is not sufficient for Y.
- If the definition is too narrow, then Y is not sufficient for X.
- If the definition is too wide, then the extension of X includes the extension of Y.
- If X is not necessary for Y, then the definition is too wide.

Fill in the blank: If the definition is both too wide and too narrow,
then X is _____ for Y.

15. Provide your own examples

Give your own examples of distinct conditions X and Y such that:

- X is logically necessary and logically sufficient for Y.
- X is causally necessary but not causally sufficient for Y.
- X is logically sufficient but not logically necessary for Y.
- X is neither causally necessary nor causally sufficient for Y.

16. Different kinds of necessity

Think about the different uses of ‘must’ in everyday life. Find a few examples of such uses expressing a kind of necessity that is distinct from logical, causal, technological or legal necessity. Explain the kind of necessity the speaker is likely to have in mind.

17. Statements about possibility

Are these statements true or false?

- If a situation is technologically possible, then it is logically possible.
- If a situation is logically possible, then it is causally possible.
- If a situation is causally possible, then it is technologically possible.
- If a situation is technologically possible, then it is causally possible.
- If a situation is technologically impossible, then it is causally impossible.
- Logically impossibility is a sufficient condition for causal impossibility.
- Causal impossibility is a necessary condition for logical impossibility.
- If $X = Y$, then X is logically necessary and sufficient for Y .
- If X is logically sufficient for Y , and Y is logically sufficient for Z , then Z is logically necessary for X .

18. Explaining connections

Explain the connections between the items for each group of concepts below using necessary and sufficient conditions:

- Murder, killing
- Having made a promise to sing, having a duty to sing
- Swimming, moving one’s body
- Skiing, moving one’s body
- Lying, saying something true

V.Linguistic pitfalls

19. Vagueness and ambiguity

Fill in the blanks with either ‘vagueness’ or ‘ambiguity’ (or ‘vague’, ‘ambiguous’, etc.):

- The ____ of a word can be eliminated by changing the context where the word appears.
- ____ is a matter of degree.
- A word may be ____ without being ____.
- It is easier to avoid ____ in language than ____.

20. Any problems?

Discuss the linguistic pitfalls in these passages, if there are any:

- A prostitute is simply someone who uses his or her body to try to satisfy customers in exchange for money. But everyone who works for money uses his or her body in one way or another to satisfy his or her bosses or clients. Therefore, we are all prostitutes.
- There are three types of rules: legal, morality, and politics.
- Human nature should respect animal rights and stop using animals as food from now on. [HKU student exam paper]
- A: Very few people believe that God exists.
B: Surely not. There are supposed to be at least 4 billion people with religious beliefs.
A: Well, they might say that they believe in God, but do they really believe what they say? If they really believe in God, they would devote every second of their lives to live as God says they should, loving and helping others and doing good instead of worrying about money and their own future.
- Using animals for food is tasty. [HKU student exam paper]
- If we don't succeed, we run the risk of failure. [Former US Vice-President Dan Quayle]
- 'What we see at any given moment is in general a fully elaborated representation of a visual scene.' [From Churchland, Ramachandran, and Sejnowski (1994) 'A critique of pure vision'.]
- Every year, scholars hold Conferences on Equality and call for greater equality, and no one challenges the basic tenet. But what justification can equality find in the nature of man? If each individual is unique, how else can he be made "equal" to others than by destroying most of what is human in him and reducing human society to the mindless uniformity of the ant heap? [Murray Rothbard 'Ten Ethical Objections to the Market Economy' <http://www.mises.org/story/1469>]

VI. Basic logic

21. Logical equivalence

For each set of statements below, determine whether the statements are logically equivalent to each other. If not, how would you describe their logical connections?

- Someone is loved by everyone.
Everyone loves someone.
There is someone who is loved by everyone.
- You cannot come to the party.
It is not the case that you can come to the party.
- If Julie is nice, then Peter is not going to leave her.
If Peter is going to leave Julie, then Julie is not nice.
If Julie is not nice, then Peter is going to leave her.
- I don't know anything.
I don't know everything.

22. Negation

For each set of statements below, identify those that are logically equivalent to each other.

- There is a God.
There may be a God.
There is no God.
There may not be a God.
Probably, there is a God.
It is not true that there is no God.
- All robberies are cases of theft.
It is not true that all robberies are not cases of theft.
It is not the case that some robberies are not cases of theft.
Some robberies are not case of theft.
Some cases of theft are robberies.

Some robberies are cases of theft.

Not all robberies are cases of theft.

- He is neither famous nor happy.
- He is not famous and he is not happy.
- It is not the case that he is famous and happy.

23. True/false questions

Are these claims correct? See if you can explain why and come up with counterexamples for the false ones.

- If P is consistent with Q, and Q is consistent with R, then P is consistent with R.
- If P is inconsistent with Q, and Q is inconsistent with R, then P is inconsistent with R.
- If P, Q and R are consistent with each other, then P and Q are also consistent with each other.
- If the definition of A = B is too narrow, then the absence of B is inconsistent with the absence of A.
- A set of false statements cannot entail a true statement.
- If P entails Q, and Q is false, then P must also be false.
- If P is inconsistent with Q, and R entails Q, then P is inconsistent with R.
- ‘P or Q’ in the exclusive sense entails ‘P or Q’ in the inclusive sense, but not the other way round.
- ‘If P then Q’ is consistent with ‘P and Q’.

24. Consistency

Determine the consistency of each set of statements below.

- All puddings are nice. This dish is a pudding. No nice things are wholesome. This dish is wholesome.
- If he is guilty, then his DNA will be on this shirt. If he is guilty, then he was not wearing a shirt. If he was not wearing a shirt, then his DNA won’t be on this shirt.
- We are fascinated with being wrong. It teaches us about ourselves. Not only are there things we don’t know, but the things we do know can be wrong. [Richard Price ‘Introduction’ *The future of spacetime*]
- I would never get AIDS. But it somehow happened and it was only because I was unlucky.

25. Fun logic puzzles

- A rich man makes a promise to you: ‘I have a diamond, a coin, and a rock. If you say something true, then I will give one of them to you, but it could be any one of the three. If you say something false, I won’t give any of them to you.’ What should you say if you want him to give you the diamond?
- A very special island is inhabited only by knights and knaves. Knights always tell the truth, and knaves always lie. You meet two inhabitants: Carl and Bill. Carl says, ‘I and Bill are both knights or both knaves.’ Bill claims, ‘Only a knave would say that Carl is a knave.’ Can you determine who is a knight and who is a knave?
- As above, but this time you meet three inhabitants: Zed, Ted and Zippy. Zed claims that it’s false that Zippy is a knave. Ted says, ‘Either Zippy is a knight or I am a knight.’ Zippy says that Ted is a knave.

VII. Arguments

26. Constructing examples

- See if you can come up with examples of the different patterns of arguments discussed in the reading material, e.g. *modus ponens*, *modus tollens*, *reductio*.
- Give an example of an argument of the type *denying the antecedent*, with false premises and a true conclusion.

27. True/False questions.

- All sound arguments have true premises.
- If an argument has a false conclusion, it cannot be sound.
- If an argument is valid but unsound, its conclusion must be false.
- If all the premises and the conclusion of an argument are true, this still does not imply that the argument is valid.
- If the conclusion of a valid argument is true, the argument is a sound argument.
- If an argument is invalid, then whenever the premises are all false, the conclusion must also be false.
- If an argument is invalid, then it is possible for the conclusion to be false when all the premises are true.
- If P and Q are the conclusions of two sound arguments, then P and Q must be

consistent with each other.

- If P entails Q, then ‘P. Therefore Q.’ is a valid argument.
- If ‘P. Therefore Q.’ is a valid argument, then ‘P and it is not the case that Q’ is inconsistent.

28. Evaluate the validity of these arguments

- All cocos are bobos. All lulus are bobos. So all cocos are bobos.
- I shall go to the convention if and only if Tim doesn’t. But Tim is going to the convention. So I won’t be going to the convention.
- Either Angel Jenny has two wings or she has a pair of running shoes. If Angel Jenny has two wings, then she can fly. If Angel Jenny has a pair of running shoes, then she can run. Therefore, either Angel Jenny can fly or she can run.
- If the hat can sing, then the snake can speak. If the snake can speak, then the hat cannot sing. Hence, if the hat can sing, then it cannot sing. Now, either the hat can sing or it cannot sing. If the hat cannot sing, then it cannot sing. Hence, the hat cannot sing.

29. Argument analysis

This is from a letter sent to a newspaper by a reader responding to an article claiming that Shakespeare was actually an Italian. (cited by Charles Twardy)

SO Shakespeare was an Italian because almost half of his plays are set in Italy.
 Almost all of Isaac Asimov’s novels are set in outer space — does that mean
 that he was a Martian?

graham simpson
 Cairns, Qld

What is supposed to be the main conclusion of this letter? Can you spell out the premises and reconstruct the argument?

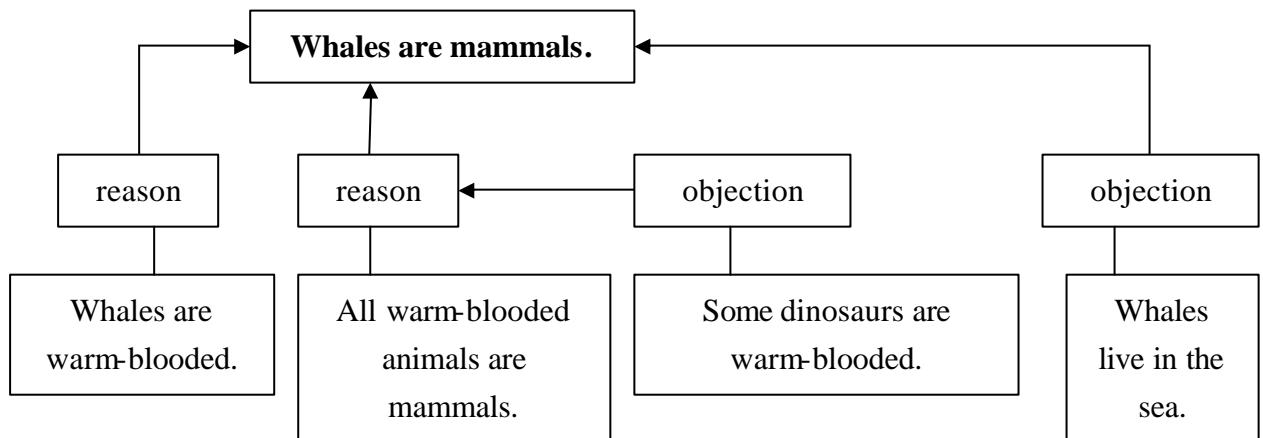
The following is taken from an email of a Catholic priest David Trosch in Alabama. Discuss and evaluate his argument in support of the death penalty.

TO ARGUE AGAINST THE DEATH PENALTY is to contend with constituted reality.
 Ever since Adam and Eve committed the Original Sin, every living creature is subject to it.

Every one of us is born on Death Row and lives out his allotted lifespan in its shadow without hope of reprieve. God made that clear when He told Adam that “in what day soever” he preferred his own will above his Creator’s, “thou shalt die the death,” condemning him sooner or later to “return to the earth out of which thou wast taken: for dust thou art, and to dust thou shalt return” (Gen. 3:19). In other words, there has always been a death penalty. God instituted it, and He was the first to impose it, embedding it in the very fabric of natural law.

30. Argument mapping

Consider the following argument map, which is not drawn correctly. Apply the holding hands and rabbit rules to add hidden assumptions, and adjust the arrows if necessary. There is no need to evaluate this argument.



Draw an argument map for this argument. Statement #11 is the conclusion.

1. Either Dumbledore and Harry are playing quidditch or Harry and Hermione are studying in the library.
2. If Dumbledore and Harry are playing quidditch, then Harry will win the game.
3. If Harry and Hermione are studying in the library, then Hermione is studying in the library.
4. If Hermione is cooking, then she is not studying.
5. If she is not studying, then she is not studying in the library.
6. If Hermione is cooking, then she is not studying in the library.
7. Hermione is cooking.
8. Hermione is not studying in the library.
9. It is not true that Harry and Hermione are studying in the library.
10. Dumbledore and Harry are playing quidditch.

11. Harry will win the game.

31. Identify the hidden assumptions in these arguments

- The Bible says, ‘ women are to be silent in the churches; utterance is not permitted to them.’ Therefore, women should not speak in the churches.
- From past experience, all lemons are sharp. Therefore, the lemons on this tree are also sharp.
- Most people disapprove of extra-marital affairs. So extra-marital affairs are wrong.
- You want to be rich in a short time. So you should invest in the stock market.
- Miss Koo has been interested in English since she was in Secondary School.
Therefore, I think she is well suited for the English programme in the HKU Arts Faculty.

VIII. Inductive reasoning

32. Miscellaneous questions

- Give an example of an inductively strong argument where the conclusion has a very low probability.
- Give an example of an inductively weak argument where the conclusion has a high probability of being true.

IX. Venn diagrams

33. Encoding information

For each statement below, draw a Venn diagram to capture its information:

- Something is good but not cheap.
- Something is cheap but not good.
- Something is both good and cheap.
- Something is not both good and cheap.
- Something is either A or B, but not both.
- Every A is either B or C, but not both.

- If something is A, then it is also B and C.

34. Evaluating validity

Use Venn diagrams to check the validity of these arguments:

- All rich men are married. Therefore, all married men are rich.
- No women are married and rich. Therefore, no rich women are married.
- All my friends are your friends. Some of your friends are philosophers. Therefore, some of my friends are philosophers.
- If a person is good, then he or she is not bad. I am a bad person. Therefore, I am not good.
- Andrew is a tall person. No tall person is small. Therefore, some tall person is not small.
- All dogs that are brave are handsome. Therefore, some dogs are brave.
- Something is either female or gay. Nothing female is stupid. Nothing gay is stupid. Therefore, something is not stupid.
- If a person is ill, then he or she does not eat much. If a person is unhappy, then he or she does not eat much. Therefore, If a person is ill and unhappy, then he or she does not eat much.
- Fishes are either red or blue but not both. Some fishes are red. Therefore, some fishes are not blue.
- Some cats are loving. Some cats are caring. Therefore, some cats are loving and caring.

35. Dealing with ‘most’ and ‘very few’

This was an exam question: How would you adapt Venn diagrams to evaluate the validity of these argument?

- Most cooks are men. Most men are idiots. So most cooks are idiots.
- Very few plants are purple. Very few purple things are edible. So very few plants are edible.

X. Scientific reasoning

36. The hypothetical-deductive method

Consider the passage below. Identify the theory to be tested, the predictions and the relevant observations. Do the observations confirm the theory? Is there any disconfirming evidence? One alternative explanation of the observation is that the subjects were merely lucky in their guesses. Is this a plausible explanation? Can you think of another alternative explanation? Is it better than the explanation that is offered?

For decades, psychologists are reluctant to accept the possibility that the unconscious mind exists. However, Dr. Anthony Marcel of Cambridge disagrees. He has developed a model where the unconscious mind is able to perceive and remember things of which the conscious mind is unaware. One of the most interesting tests of his theory is "unconscious reading".

In one experiment, a word is flashed on the screen for a subject to see for a very short period of time. In addition, the word is "masked" by being surrounded with other nonsense words such as "esnesnon". When asked directly, the subjects were unable to say what real word appeared on the screen. Dr. Marcel then asked his subjects to guess which of two words looks like the masked word. For example, the masked word might be "blood" and the two choices for look-alikes might be "food" and "week". Amazingly, the subjects were correct in their guesses 90% of the time.

37. Exploring alternatives

The report below says that a blind woman can recognize colors by touch. What kind of questions or experiments would you ask or do to check if this is true?

Blind woman recognises colour by touch

A blind woman has baffled scientists after proving on TV that she can distinguish between colours by touch. Gabriele Simon, 48, from Wallenhorst in Germany, revealed her ability in her country's most popular TV show Wetten dass. She used her fingertips to recognise the different colours of various t-shirts and blouses while blindfolded. She said: "I took me 20 years to master this skill. It is a combination of pure learning and concentration." Ms Simon added: "This ability really gives me more independence, as I don't need to ask my

mother about what to wear anymore.” (From http://www.ananova.com/news/story/sm_1564181.html)

38. Is psychology a science?

Explain what might be wrong with these arguments and identify their hidden assumptions. For each argument, construct an analogous argument about another science that is obviously wrong.

- Psychology isn’t a science because psychologists can’t predict human behavior with 100% accuracy.
- Psychology can’t be a science because we cannot see what other people think.
- Psychology can’t be a science because people change all the time.

39. Analysis of inductive reasoning

Evaluate the reasoning contained in these passages. Try to identify alternative explanations for the relevant conclusions or observations. Also, think about additional facts or information which would help determine the plausibility of the conclusions.

Until recently, people in Sapi did most of their shopping by driving to shopping malls. They are beginning, however, to do more of their shopping by ordering merchandise from mail-order catalogs and the Internet. These purchases are delivered to them by mail or by a delivery service. For many purchases, Sapians no longer need to drive to and from shopping malls; there will therefore be a resulting reduction in the consumption of vehicle fuel in Sapi.

Milk and dairy products are rich in vitamin D and calcium, substances essential for building and maintaining bones. Many people therefore believe that a diet rich in dairy products can help prevent osteoporosis, a disease in which the bones weaken significantly with age and that is linked to both environmental and genetic factors. But a long-term study of a large number of people has found that those who have consistently consumed dairy products throughout the years of the study have a higher rate of bone fractures than any other participants in the study. Since bone fractures are a symptom of osteoporosis, this study result shows that a diet rich in dairy products may actually increase, rather than decrease, the risk of osteoporosis.

Woven baskets characterized by a particular distinctive pattern have previously been found only in the immediate vicinity of the prehistoric village of Palea and therefore were believed to have been unique to the Palean people. Recently, however, archaeologists discovered such a "Palean" basket in Lithos, an ancient village across the Brim River from Palea. The Brim River is very deep and broad, and so the ancient Paleans could only have crossed it by boat, but there is no evidence that the Paleans had boats. And boats capable of carrying groups of people and cargo were not developed until thousands of years after the Palean people disappeared. Moreover, Paleans would have had no need to cross the river—the woods around Palea are full of nuts, berries, and small game. It follows that the so-called Palean baskets were not unique to Palea.

The following appeared in a proposal from the economic minister of the country of Paraterra.

"In order to strengthen its lagging economy, last year the government of the nearby country of Bellegea began an advertising campaign to promote ecologically sound tourism (ecotourism). This year the number of foreign visitors arriving at Bellegea's main airport doubled, and per capita income in Bellegea increased by ten percent. To provide more income for the population of Paraterra and also preserve the natural environment of our tiny country, we too should begin to promote ecotourism. To ensure that our advertising campaign is successful, we should hire the current director of Bellegea's National Tourism Office as a consultant for the campaign.

The following appeared in a newspaper article about law firms in the city of Megalopolis.

"In Megalopolis, the number of law school graduates who went to work for large, corporate firms declined by 15 percent over the last three years, whereas an increasing number of graduates took jobs at small, general practice firms. Even though large firms usually offer much higher salaries, law school graduates are choosing to work for the smaller firms most likely because they experience greater job satisfaction at smaller firms. In a survey of first-year students at a leading law school, most agreed with the statement that earning a high salary was less important to them than job satisfaction. This finding suggests that the large, corporate firms of Megalopolis will need to offer graduates more benefits and incentives and reduce the number of hours they must work."

XI. Causation

40. Optimism is good for the heart

This is a news report from Reuters (Mon Feb 27, 4:28 PM ET). Does it show that optimism makes the heart healthy?

Optimism is good for the heart, a study said on Monday. The most optimistic among a group of 545 Dutch men age 64 to 84 had a roughly 50 percent lower risk of cardiovascular death over 15 years of follow-up, according to the study published in the Archives of Internal Medicine.

Previous research has suggested being optimistic boosts overall physical health and lowers the risk of death from all causes. A positive attitude also has been shown to help patients who suffer from heart disease caused by narrowed arteries. The new study measured participants' level of optimism about their lives by having them respond to statements such as "I do not look forward to what lies ahead for me in the years to come" and "My days seem to be passing by slowly," or "I am still full of plans."

"Optimism can be estimated easily and is stable over long periods," though it does tend to decrease with age, said lead researcher Erik Giltay of the Institute of Mental Health in Deft, the Netherlands.

On a scale of zero to three, with three being most optimistic, the average scores in the study fell from 1.5 in 1985 to 1.3 in 2000. Higher scores were associated with being younger, being better educated, living with others, having better health, and doing more physical activity.

41. Alternative explanations

What do you think is the most plausible explanations for these correlations?

- Children with bigger hands are better at spelling.
- A six-year study of more than a million adults ages 30 to 102 showed that people who get only 6 to 7 hours a night have a lower death rate than those who get 8 hours of sleep.

42. Give your own examples

Provide your own examples of conditions X and Y such that:

- X is causally sufficient but not causally necessary for Y
- X is causally necessary but not causally sufficient for Y
- X is a triggering cause and Y is a structural cause for some effect Z

43. Communication with the dead

This is an extract of a report from *Arizona Daily Wildcat* (June 16, 1999) about a study to show that certain people can communicate with the dead. What do you think is the most serious flaws with this experiment, assuming that the report is mostly correct?

Gary Schwartz, psychology professor and co-founder of the University of Arizona Human Energy Systems Lab speaks about his work at the University of Arizona (UA). A team of UA scientists and students conducted a unique experiment this weekend, probing the possibility of an afterlife by studying how mediums commune with the dead.

Researchers invited a panel of mediums to meet with 10 people whose loved ones recently died. The mediums tried to receive information from the deceased without prior knowledge about the deceased and while under observation.

Schwartz invited four mediums to participate in the study, including famous "superstars" of the psychic world such as author John Edwards, and unknowns such as California housewife Laurie Campbell. The medium sat facing a wall while a researcher looked on. A "sitter", who had recently lost a relative or friend, would then enter the room and sit six feet behind the medium. Schwartz acknowledged that a few of the sitters were acquaintances of the mediums.

For up to 10 minutes, the medium and the sitter would sit in silence. The medium, who could not see the sitter, would concentrate on receiving psychic impressions. A question and answer session followed, in which the sitter was allowed only to answer "yes" or "no." Schwartz said that the study was set up to minimize communication between the medium and the sitter, avoiding conscious or subconscious prompting between the two. While the final results have not been written up, Schwartz said he was impressed with the mediums performance. On several occasions the mediums were able to pick out the names and personal information of the deceased, he said.

XII. Moral reasoning

44. Fact-value gap

- “Ally hates lying and thinks that liars are wicked and should be shot.” Is this a factual or normative statement?
- “Driving on the left as opposed to the right is neither morally correct nor morally wrong.” Is this a factual or normative statement?
- The actress Alyssa Milano says “Being that we’re all animals, you learn on safari that monogamy is not natural. So I think it goes against men’s nature because they are lions in the bush. No pun intended.” Suppose what she says is right. Does it follow immediately that it is wrong to require men to be faithful to their partners?

45. Moral absolutism, moral contextualism and moral relativism

- Suppose someone says, “It is difficult to find out whether X is right or wrong. Some people believe that X is right and others disagree. I cannot make up my mind.” Does this remark reflect the position of moral contextualism or relativism?
- Discuss this argument. “Morality is not objective, and since we should believe in the truth, we ought to believe in moral relativism.”
- Suppose Peter is a moral relativist taking a course in moral philosophy. His teacher did not like moral relativism and decided to fail Peter, even though Peter got good marks in his coursework. Should Peter be angry about this?
- Discuss this remark. “You believe that torture is never justified, and you think that abortion is always wrong. But you think that lying is sometimes right and sometimes wrong. So you are a moral absolutist and a moral contextualist at the same time. So you are logically inconsistent.”

46. Moral absolutism

Many versions of moral absolutism are not very plausible. The standard way to criticize moral absolutism with regard to an action F is to consider the different consequences that F might produce. So F, e.g. telling the truth, cannot be always right (or wrong) because it might produce very bad (or good) consequences. Can you think of any kind of action for which moral absolutism is correct? Start by thinking about the case of torture, do you agree that torture is always wrong? How about: (a) incest, (b) rape, (c) torturing an innocent baby, (d) torturing an innocent baby just for fun without affecting anything else?

47. Animal rights

The point of this exercise is not to convince you that you should not eat meat, but to understand the arguments for and against eating meat. List as many reasons as you can to explain why it is not wrong to eat meat. (Or why eating meat is wrong.)

Make sure that your arguments do not commit the naturalistic fallacy. Also, consider whether the same reasons would show that it is ok to eat human babies, who are mentally not so developed. We can even imagine that these babies are genetically engineered so that they are grown in laboratories and cannot grow into adults.

XIII. Analogical arguments

For each analogical argument below, decide whether the analogy is apt. Then come up with an overall assessment of the argument.

- Given enough time, water can cut through the toughest rocks. So in life, all problems can be resolved as long as we persist and do not give up.
- A fetus is just a lump of cells. Nobody complains if you wash your hands and lose a few cells from your body. So abortion is no big deal.
- Having sex is just like shaking hands. If you are willing to shake hands with me, I don't see why you can't sleep with me.

XIV. Fallacies and cognitive biases

48. Analysis

Discuss these passages.

- Peter Woo Kwong Ching is a famous businessman in Hong Kong, and is the Chairman of the Trade Development Council. He wrote in a newspaper column criticizing the idea of “one person one vote”. He said it is not fair because under such a system, political influence is not proportional to social contribution. A professional or a businessman who pays a lot of tax has just one vote, and so he or she has the same amount of influence as someone who pays nothing. Discuss this argument and identify some of the assumptions involved.

- ‘I’ve noticed over the years that the kind of foods that are healthiest for you generally taste the worst. Oatmeal, tofu, and broccoli all taste bad, but are good for you. Yesterday, I was walking through the woods when a leaf blew into my mouth – boy did it taste terrible. But then I thought it must be healthy since it taste really bad. So I washed it down with some cola.’
- ‘Microsoft software is undoubtedly the best in the market. Otherwise Bill Gates would not have got so rich!’
- ‘There cannot be any objective morality without God. The philosopher Russell is an atheist, and we all know that he slept around and seduced young girls and was nasty to lots of people.’
- ‘God exists because after many people have believed in God, they live a meaningful life and become a lot happier than before.’
- ‘If God appeared to me personally and perform some miracles, that would certainly prove that God exists. But this has never happened, so God does not exist.’
- ‘Married Hong Kong men like to spend their holidays with their families. In a survey carried out last Sunday outside the Toys R’ Us store at the Festival Walk mall in Kowloon Tong, most married men say that they prefer to spend their holidays with family members.’
- A: “This robber is a very bad character. He robbed an old lady and kicked her.”
B: “So? Are you sure you have not done anything bad in your whole life?”
- ‘Islam is based on faith. Hinduism is based on faith. Christianity is based on faith. So all religions are basically the same.’

- the end -