

reason and argument

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Validity and schematization problems

For each of the following examples, provide a schematization that captures how the truth of the whole statement depends on the truth of its parts, if there are any.

You can't park there unless you're a cop, but I can valet it for you.

Without trying to make excuses, he admitted to the crime and asked for forgiveness.

He pulled through despite doctors' dire predictions.

He said he's rested and ready. (Think of two options here.)

Though ready, he is neither fit nor trim.

I never thought about love when I thought about home.
(Apologies to The National.)

You want to know how to rhyme you better learn how to add.
(Apologies to Mos Def.)

If the federal government shuts down on Tuesday, some employees will continue reporting to their departments and agencies, while others will be furloughed. (*NYT*, 9/29/13)

You rush a miracle man, you get rotten miracles.

- Billy Crystal in *The Princess Bride* (1987)

Without a complete capitulation by house Republicans, large sections of the government would close, hundreds of thousands of workers would be furloughed without pay, and millions more would be asked to work for no pay. (*NYT*, 9/29/13)

The House's unruly conservatives had more than enough votes to defeat a spending bill that would not do significant damage to the health care law, unless Democrats were willing to bail out the speaker. (*NYT*, 9/29/13)

Mr. McGovern would love to buy health insurance, but only if it costs him less than \$100 a month. (*NYT* altered, 9/29/13 Tricky!)

It is not the case that either I always drink beer, or when I do I don't drink *Dos Equis*. – The least eloquent man in the world

Efforts to teach the language to children on the reservation have grown, with more schools offering classes, but most people who count Navajo as their first language are now elderly. (*NYT* 9/26)

Although today's new moon takes place in the most sensitive area of your chart there is nothing you should be too worried about. (Scorpio Horoscope, NY Post, 9/24/14)

If, and only if, you are feeling ambitious, you could make pizza dough tonight. (NYT, 9/10/14)

Unless the Lord had been my help, my soul had almost dwelt in silence. (Psalms 94:17, KJV)

Marry, and you will regret it; do not marry, and you will regret it; but churros are a must at a bridal shower. (KimKierkegaardashian, Twitter, 9/1/14)

Cersei seemed quite interested in saving him, but only if he isn't weakened by the treatment. (NYT, 6/16/14, seriously)

We will not sign any deal unless all sanctions are lifted on the same day. – Hassan Rouhani quoted *Reuters* 4/9/15

Merkel warns that Greece will receive aid only if reforms are met. – *NYT* 3/20/15

Japanese Prime Minister Shinzo Abe should only be invited to address the U.S. Congress during an expected visit if he acknowledges Japan's World War Two past. – *Reuters* 3/19/15

Strive not with a man without cause, if he have done thee no harm. – Job 3:30, *KJV*

If they were intending to laugh at me there would be nothing unpleasant in their spending their time in court laughing and jesting, but if they are going to be serious, the outcome is not clear except to your prophets. – Plato, *Euthyphro* Grube, trans.

Indicate whether each of the following arguments is valid (V/X):

_____ If something is red, then everything is red.
Everything is red. Therefore, something is red.

_____ Some dogs are bigger than other dogs.
Therefore, some dogs are smaller than other dogs.

_____ If that's a Rolex, then I'm the Pope. I'm not the Pope.
So, that's not a Rolex.

_____ You can drive only if you have a license.
You have a license. So, you can drive.

_____ Only red cards win the game. This is a red card.
So this card wins the game.

_____ You can drink here only if you are 21 or over. You are 22.
Therefore, you can drink here.

_____ The United States will act only if surrounded by a broad coalition. (NYT, 9/24/14, altered)

The US is surrounded by a broad coalition.

Therefore, the US will act.

_____ Half the options being granted to senior executives this year will accrue to them only if the company hits its earnings targets in 2016. (NYT, 7/24/14)

All the options being granted to senior executives this year will accrue to them.

Therefore, the company hits its earnings targets in 2016.

True or false?

_____ All sound arguments are valid.

_____ All valid arguments are sound.

_____ An argument is sound if it is valid.

_____ An argument is sound only if it is valid.

_____ An argument is sound, unless it is valid.

_____ Only sound arguments are valid.

_____ A valid argument has at least one true premise.

Fill out the truth table and determine whether or not the following argument form is valid.

$\sim p \ \& \ q$ Circle one: valid not valid
 $\sim(q \rightarrow p)$
 $\sim p$

		Premise	Premise	Conclusion
P	Q	$\sim p \ \& \ q$	$\sim(q \rightarrow p)$	$\sim p$
T	T			
T	F			
F	T			
F	F			

Schematize the following argument in a manner that shows how the truth of each statement depends on the truth of its parts, if any.

She doesn't weigh the same as a duck unless she's made of wood.

She's made of wood only if she's a witch.

She weighs the same as a duck.

Therefore, she's a witch.

Write out a truth table that includes columns for each of the premises and the conclusion of your schematized argument. (This will be a biggish truth table.)

Does your schematization show that the argument is valid, or not? Explain your answer.

There are many ways to schematize any sentence accurately, even if not all ways of doing so are particularly useful. Also, any schema accurately schematizes indefinitely many sentences. For each of the following sentences, indicate whether (Y/N) it is accurately schematized by the propositional form:

$$\neg(p \vee (\neg q \ \& \ \neg r))$$

_____ If the storm strikes, we will be flooded or blown away.

_____ Faculty may not attend, but students or staff may.

_____ It is cloudy, but if the wind doesn't pick up, we will sail.

_____ It's not true that either we go now or are late and tired.

_____ Either we will win, we will lose, or we will refuse to play.

_____ He is tanned, rested, and ready.

_____ He is ready only if he is tanned and rested.

_____ He won the game despite being distracted and hungry.

For each of the following propositional forms, indicate whether it is an accurate schematization of the sentence below. Answer 'Y' for yes and 'N' for no.

Physics is not flawed, but I can't have free will unless physics is flawed.

_____ p

_____ $p \ \& \ \neg p$

_____ $p \ \& \ q$

_____ $\neg(\neg p \vee \neg q)$

_____ $p \rightarrow q$

_____ $q \vee \neg q$

_____ q

_____ $p \vee q$

_____ $(p \rightarrow q) \ \& \ \neg q$

_____ $(p \rightarrow q) \ \& \ p$

_____ $p \rightarrow (q \vee r)$

_____ $p \ \& \ (\neg q \vee r)$

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