



# Critical Reasoning for Beginners: Three

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**Re-cap on last week:**

**There are two basic types of argument:**

- **deductive**
- **inductive**

**Deductive arguments are such  
that....**

**...the truth of their premises makes  
the truth of their conclusion *certain***

**Inductive arguments are such that...**

**... the truth of their premises makes the truth of their conclusion more likely...**

**...either *much* more likely...**

**...or *slightly* more likely**

**We then looked at some examples of:**

- arguments that are deductively valid**
  - in virtue of their form**
  - in virtue of their content**
- inductive arguments**

**This week we will be learning how to identify and analyse arguments....**

**...how to set them out 'logic book style'.**

# Here is an argument set out logic-book-style:

**Premise One:** It is Friday

**Premise two:** Marianne always wears  
jeans on Fridays

**Conclusion:** Marianne is wearing jeans

## **The point of setting out arguments logic–book-style:**

- 1. It enables us to add suppressed premises**
- 2. it enables us to eliminate cross references, irrelevancies and inconsistent terms**
- 3. it makes it much easier to evaluate arguments**



**On the surface of it it is easy to set out arguments logic-book-style. Try these:**

**a) Since Manchester is north of Oxford and Edinburgh is north of Manchester, Edinburgh is north of Oxford.**

**b) Witches float because witches are made of wood and wood floats.**

**But now try this one:**

**Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do. If she didn't realise then you obviously went about it in the wrong way. In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'. If you thought that you're an idiot. But you're not an idiot you're just twisted. So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

# **A set of steps for analysing arguments:**

- 1. identify the conclusion of the argument;**
- 2. identify each of the premises;**
- 3. add suppressed premises**
- 4. remove irrelevancies;**
- 5. remove inconsistent terms;**
- 6. remove cross-references.**

# **Identifying premises and conclusions:**

## **Look for the argument indicators:**

**So, therefore, then, accordingly, hence,  
since, for, because...**

**From which we see that...it follows that...  
which establishes that...**

# **Identify the argument indicators in these arguments:**

**Since all men are mortal, Socrates is mortal, for Socrates is a man.**

**Socialism was doomed to failure because socialism did not provide the incentives needed for a prosperous economy.**

**Since many newly emerging nations do not have the capital resources necessary for sustained growth they will continue to need help from industrial nations.**

# Identify the argument indicators in these arguments:

**Since** all men are mortal, Socrates is mortal,  
**for** Socrates is a man.

Socialism was doomed to failure **because**  
socialism did not provide the incentives  
needed for a prosperous economy.

**Since** many newly emerging nations do not  
have the capital resources necessary for  
sustained growth they will continue to need  
help from industrial nations.

**Find the conclusion of this argument:**

**Since all men are mortal, Socrates is mortal, for Socrates is a man.**

**Since all men are mortal, Socrates is mortal, for Socrates is a man.**

**Find the conclusion of this argument:**

**Socialism was doomed to failure because socialism did not provide the incentives needed for a prosperous economy.**

**Socialism was doomed to failure** because socialism did not provide the incentives needed for a prosperous economy.



**Find the conclusion of this argument:**

**Since many newly emerging nations do not have the capital resources necessary for sustained growth they will continue to need help from industrial nations.**

**Since many newly emerging nations do not have the capital resources necessary for sustained growth **they will continue to need help from industrial nations.****

Identify all the premises of this argument (don't forget there might be a suppressed premise):

**Socialism did not provide the incentives needed for a prosperous economy.**

**Conclusion: Socialism was doomed to failure**

**Premise one: Incentives are needed  
for a prosperous economy**

**Premise Two: socialism did not  
provide incentives.**

**Conclusion: Socialism was doomed  
to failure**

**Identify the premises of this argument:**

**Since many newly emerging nations do not have the capital resources necessary for sustained growth they will continue to need help from industrial nations.**

**Premise One: Many newly emerging nations do not have capital resources**

**Premise Two: Capital resources are necessary for sustained growth**

**Premise Three: If a newly emerging nation is to sustain its growth, and it does not have capital resources, it will need help from industrial nations**

**Conclusion: Many newly emerging nations will need help from industrial nations.**

**Now we are going to try the really complicated argument**

**Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do. If she didn't realise then you obviously went about it in the wrong way. In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'. If you thought that you're an idiot. But you're not an idiot you're just twisted. So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

Identify the conclusion of this argument:

**Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do. If she didn't realise then you obviously went about it in the wrong way. In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'. If you thought that you're an idiot. But you're not an idiot you're just twisted. So if the poor thing did want you to tickle her tummy you deserve to get scratched.**



**Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do. If she didn't realise then you obviously went about it in the wrong way. In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'. If you thought that you're an idiot. But you're not an idiot you're just twisted.**

**Conclusion: So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

**Identify the premises:**

**Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do. If she didn't realise then you obviously went about it in the wrong way. In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'. If you thought that you're an idiot. But you're not an idiot you're just twisted.**

**Conclusion: So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

**Premise One: Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do.**

**Premise Two: If she didn't realise then you obviously went about it in the wrong way.**

**Premise Three: In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'.**

**Premise Four: If you thought that you're an idiot. But you're not an idiot you're just twisted.**

**Conclusion: So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

## Remove irrelevancies:

Premise One: Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do.

Premise One: Well perhaps she didn't want you to tickle her tummy, or she didn't realise that was what you were going to do.

**Premise Two: If she didn't realise then you obviously went about it in the wrong way.**

**Premise Two: If she didn't realise then you **obviously** went about it in the wrong way.**

**Premise Three: In that case you deserved to get scratched unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'.**

**Premise Three: In that case you deserved to get scratched **unless you really thought she was such a perceptive cat that she'd understand 'woof-woof' meant 'roll over'.****

**Premise Four: If you thought that you're an idiot. But you're not an idiot you're just twisted.**

**Premise Four: If you thought that you're an idiot. But you're not an idiot you're just twisted.**

**Conclusion: So if the poor thing did want you to tickle her tummy you deserve to get scratched.**

**Conclusion: So if the poor thing did want you to tickle her **tummy** you deserve to get scratched.**



**Premise One: She didn't want you to tickle her, or she didn't realise that was what you were going to do.**

**Premise Two: If she didn't realise then you went about it in the wrong way.**

**Premise Three: In that case you deserved to get scratched**

**Conclusion: So if the poor thing did want you to tickle her you deserve to get scratched.**

**Remove inconsistent terms and cross references:**

**Premise One: She didn't want you to tickle her, or she didn't realise that was what you were going to do.**

**Premise One: She didn't want you to tickle her, or she didn't realise **you were going to tickle her****

**Premise Two: If she didn't realise then you went about it in the wrong way.**

**Premise Two: If she didn't realise **you were going to tickle her** then you **were going to tickle her** in the wrong way.**

**Premise Three: In that case you deserved to get scratched**

**Premise Three: If you were going to tickle her in the wrong way you deserved to get scratched**

**Conclusion: So if the poor thing did want you to tickle her you deserve to get scratched.**

**Conclusion: So if **she** did want you to tickle her you deserve to get scratched.**

**Premise One: She didn't want you to tickle her, or she didn't realise you were going to tickle her.**

**Premise Two: If she didn't realise you were going to tickle her then you were going to tickle her in the wrong way.**

**Premise Three: If you were going to tickle her in the wrong way you deserved to get scratched**

**Conclusion: So if she did want you to tickle her you deserve to get scratched.**

To show you how easy it is to reveal the structure of this argument let's formalise it

**Identify each of the constituent sentences of the argument and assign it a sentence letter:**

**Premise One: She didn't want you to tickle her, or she didn't realise you were only going to tickle her.**

**Premise Two: If she didn't realise you were only going to tickle her then you were going to tickle her in the wrong way.**

**Premise Three: If you were going to tickle her in the wrong way you deserved to get scratched**

**Conclusion: So if she did want you to tickle her you deserve to get scratched.**



The Interpretation:

**P:** She didn't want you to tickle her,

**Q:** She didn't realise you were going to tickle her

**R:** You were going to tickle her in the wrong way

**S:** You deserved to get scratched

**Premise One: She didn't want you to tickle her, or she didn't realise you were only going to tickle her.**

**P: She didn't want you to tickle her,**

**Q: She didn't realise you were going to tickle her**

**R: You were going to tickle her in the wrong way**

**S: You deserved to get scratched**

**Premise One: P or Q**

**Premise Two: If she didn't realise you were going to tickle her then you were going to tickle her in the wrong way.**

**P: She didn't want you to tickle her,**

**Q: She didn't realise you were going to tickle her**

**R: You were going to tickle her in the wrong way**

**S: You deserved to get scratched**

**Premise Two: If Q then R**

**Premise Three: If you were going to tickle her in the wrong way you deserved to get scratched**

**P: She didn't want you to tickle her,**

**Q: She didn't realise you were going to tickle her**

**R: You were going to tickle her in the wrong way**

**S: You deserved to get scratched**

**Premise Three: If R then S**

**Conclusion: So if she did want you to tickle her you deserve to get scratched.**

**P: She didn't want you to tickle her,**

**Q: She didn't realise you were going to tickle her**

**R: You were going to tickle her in the wrong way**

**S: You deserved to get scratched**

**Conclusion: So if not-P then S**

**Premise One: P or Q**

**Premise Two: If Q then R**

**Premise Three: If R then S**

**Conclusion: So if not-P then S**

**P: She didn't want you to tickle her,**

**Q: She didn't realise you were going to tickle her**

**R: You were going to tickle her in the wrong way**

**S: You deserved to get scratched**

**Note: you can apply this methodology to your own arguments...**

**... this will help you understand exactly what you are saying and why you are saying it.**

Your homework for this week:

Either:

(a) take the argument(s) you found last week and set them out logic book style

or

(b) Chose a claim you like to make and see if you can set it out as the conclusion of an argument set out logic book style



Next week:

we shall be looking more closely at the  
notions of validity and truth