

Valid or Invalid? (Part 3)

Each question will present you with a logical argument. After being asked to identify the argument's premise(s) and conclusion, you will be asked to answer the question: "is the argument *valid* or *invalid*?" In order to receive credit, you must show your work! If you only answer "valid" or "invalid", you will receive no credit at all! In order to receive credit, you must support your answer with a truth table. If the argument in question is *invalid*, then you must highlight the row in your truth table that *proves* that the argument is *invalid*. In contrast, if the argument in question is *valid*, then you don't need to highlight anything at all. To symbolize the propositions in the logical arguments that you'll be asked to consider, "P" and "Q" shall be used in the following way:

- Let "P" stand for "The wind is natural."
- Let "Q" stand for "The wind is good."

Remember your notation! The disjunction symbol " \vee " stands for "or", the conjunction symbol " \wedge " stands for "and", the negation symbol " \sim " stands for "not", and the conclusion symbol "X" stands for "therefore", "thus", "so", or "hence".

1. "The wind is natural, so the wind is good."

- (a) Using logical notation, what is the argument's only premise?
- (b) Using logical notation, what is the argument's conclusion?
- (c) Is the argument valid or invalid? Show your work.

P: "The wind is natural."
Q: "The wind is good."

<i>Premise</i>	<i>Conclusion</i>
	\therefore

2. "The wind is natural, and the wind is good, so the wind is good."

- (a) Using logical notation, what is the argument's only premise?
- (b) Using logical notation, what is the argument's conclusion?
- (c) Is the argument valid or invalid? Show your work.

P: "The wind is natural."
Q: "The wind is good."

<u>Premise</u>	<u>Conclusion</u>
	∴

3. "The wind is natural, so either the wind is natural or the wind is good."

- (a) Using logical notation, what is the argument's only premise?
- (b) Using logical notation, what is the argument's conclusion?
- (c) Is the argument valid or invalid? Show your work.

P: "The wind is natural."
Q: "The wind is good."

<i>Premise</i>	<i>Conclusion</i>
	\therefore

4. "Either the wind is *natural* or the wind is *good*, and the wind is *natural*, so the wind is *good*."

(a) Using logical notation, what are the the argument's two premises?

(i) Premise 1:

(ii) Premise 2:

(b) Using logical notation, what is the argument's conclusion?

(c) Is the argument valid or invalid? Show your work.

P: "The wind is natural."
Q: "The wind is good."

<u>Premise 1</u>	<u>Premise 2</u>	<u>Conclusion</u>
		∴

5. "Either the wind is *good* or the wind *isn't* natural, but the wind *is* natural, so the wind is *good*."

(a) Using logical notation, what are the the argument's two premises?

(i) Premise 1:

(ii) Premise 2:

(b) Using logical notation, what is the argument's conclusion?

(c) Is the argument valid or invalid? Show your work.

P: "The wind is natural."
Q: "The wind is good."

<u>Premise 1</u>	<u>Premise 2</u>	<u>Conclusion</u>
		∴