

# Playsheet 4

## Invalid Arguments

MATH 130

**Directions:** Groups should consist of three or four people. Work together on each problem; do not delegate different problems to different people. Submit one **neatly written** write-up per group on the due date, and make sure all group members' names appear on the submission. Use complete sentences and explain your reasoning.

This Playsheet is about identifying fallacious arguments. These are just a few of the more common types.

- **Fallacy of the Converse:** An argument that employs the converse of a conditional statement that is known to be true.
- **Ad hominem:** An argument that addresses the person presenting the opposing argument rather than the argument itself.
- **Straw Man argument:** An argument that misrepresents the opposing argument and attacks that instead.
- **Hasty Generalization:** An argument that draws a general conclusion from a small set of evidence.
- **Post hoc:** An argument that concludes one thing was caused by another because it happened after the other.
- **Non-sequitur:** An argument that skips an essential step.
- **Lack of evidence:** An argument that says that because there is no evidence to the contrary, a claim must be true.
- **Circular Reasoning:** An argument that relies on the conclusion to justify the conclusion.

Decide which arguments below are valid and which employ fallacies. In the case of a fallacious argument, identify which kind of fallacy it is when possible. (Some are fallacious, but not of a kind listed above.)

Note: some arguments touch on topics that may be politically sensitive. For purposes of this course, please focus on the validity of the argument itself without regard to what your position may be on the underlying topic. Part of our goal is to see what we do in this class as part of our lives, which sometimes means looking into the themes of the day.

1. I drank a cup of coffee and was sneezing all day. Weird that coffee made me sneeze.
2. Two of my cousins are left-handed. I bet the other 48 are, too!
3. Yeah, but Kevin went to Linfield, so what do you expect? [I went to Linfield, by the way...]
4. Red Vines are obviously better tasting than Twizzlers because Twizzlers are way grosser!

5. My kid was fine, and then she got vaccinated. Within a few months, she was diagnosed with autism. The vaccine gave her autism!
6. There has never been a double-blind placebo-controlled test of the effectiveness of parachutes; therefore, parachutes are not effective.
7. “I believe that we should reallocate some resources into more effective crime-prevention and treatment options.” “My opponent believes we should completely disband all police departments.”
8. If you bake cookies, my kids will come running into the room. Hey, look! Here come the kids! You must have baked cookies.
9. The mayonnaise jar said to throw it away if the seal was broken. My wife threw it away; I guess the seal must have been broken.
10. I went to Italy for vacation and got robbed. The police caught the thief and returned my stuff. I’ll never buy ice cream again!
11. Anyone who loves books and cats is okay by me. Sarah loves books and cats. She’s okay by me!
12. Anyone who loves books and cats is okay by me. Chelsea does **not** like books, so she is not okay by me.
13. Anyone who loves books and cats is okay by me. Chelsea is **not** okay by me; she must not love books or not love cats.
14. Raising the minimum wage doesn’t make sense since things will just cost more then.

These are all short arguments. Longer arguments can be largely valid, but if they include an invalid part, they bear closer scrutiny.

15. Now find an **invalid** argument out in the world somewhere that is on a topic of interest to you and identify the error in reasoning. It does not need to be an error of a kind listed above. (Facebook memes are a rich source of fallacious arguments, for what it’s worth.)
16. Bonus problem! Explain the joke in the cartoon below.

