

APPENDIX C

ADDITIONAL EXERCISES FOR ANALYZING AND UTILIZING INFORMATION

Exercises for Errors of Faulty Logic

Directions: Match the type of error with the example.

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|-------------------------|---------------------------|
| A. Contradiction | E. Evading the issue |
| B. Accident | F. Arguing from ignorance |
| C. False cause | G. Composition |
| D. Begging the question | H. Division |

- Sam is interviewing for a job. He has listed a few references and his potential employer asks how he can be sure that the references are trustworthy. Sam says he can vouch for them.
- Jere tells his mom she shouldn't drive in the right lane on the way to work and school anymore because last time she did they got in a car accident.
- Kaitlin tells her boss that she can't come to work because she is sick, but a coworker sees her at the movie theater with a friend that afternoon.
- Krista tells her classmates she wants to be the Student Body President so that she can give students more of a say in school policy. Later, she tells the PTA members that she wants the job so that she can help create harmony between students and faculty.
- Andrew says he doesn't want to use a map when he drives to see his grandmother in another state because the last time he used a map he got lost and then ran into a parked car.
- When Wilkey learns that atoms are invisible to the naked eye, he says, "That can't be right. People are made of atoms, and if atoms are invisible, then people would be invisible too."
- Maura asks her mom if she can go to the movies with friends, and her mom tells her to eat her dinner.
- Ursula tells her soccer teammates that she should be the captain for the upcoming season. "The team always does better with a good captain, and I would be great at the job because I'm a leader."
- Victoria tells her dad that chocolate is healthy. He asks why she thinks so, and she says, "I eat a nutrition bar for lunch at school. It's healthy, and it has chocolate in it, so chocolate is healthy."
- Becks tells his friend that his neighbor believes the government is always spying on him. "Why would the government spy on him?" his friend asks. "He didn't say. He only said that there is no way to prove it isn't happening," Becks says.
- Andre says he isn't going to lend his friends any money because one of them didn't pay him back. Another of his friends says, "But I've always paid you back, and so has Jordan."
- Freddie tells his dad he thinks that Mars once had living creatures. When his dad asks why he believes this, Freddie says that no one on Earth had any pictures from Mars for most of its existence so there is no way to prove there weren't living creatures there in the past.

13. Leslie says she doesn't want to take I-80 for her family's long drive because there is a place in their city where I-80 is under construction and full of potholes.

Answers: 1—D; 2—C; 3—A; 4—A; 5—C; 6—G; 7—E; 8—D; 9—H; 10—F; 11—B; 12—F; 13—G

Directions: Match the type of error with the example.

- | | |
|-------------------------|---------------------------|
| A. Contradiction | E. Evading the issue |
| B. Accident | F. Arguing from ignorance |
| C. False cause | G. Composition |
| D. Begging the question | H. Division |

- John asks his dad why he didn't pick him up after baseball practice, and his dad asks if practice was hard.
- Taylor tells his mom he really needs money for new lacrosse equipment but then tells his father the money is for a backpacking trip with friends.
- Tara says her dog is a purebred even though she got him from the animal shelter. When her friend asks why she believes this, she says that there is no proof that he isn't a purebred.
- "Whales are bad for the worldwide food supply," says Jeffrey. "That's ridiculous," says Dawn. "No, it's not," replies Jeffrey. "Think about it. A whale eats more food than a human, so as a group, whales eat more than humans."
- Salvadore says his family owns the best restaurant in town. Maria asks how he knows, and he says, "Because we cook the best food!"
- Lawrence says he doesn't believe in God, and Tilda says he has to. "Belief in God is universal," she says. Lawrence asks why she says so. "Because everyone believes in God!" she says.
- Odette tells Nicky that she isn't going to the game that night because the last two times she went the team lost.
- Ailyn is upset because someone stole the soft drink that she left sitting with her lunch. "I'm going to go steal that soft drink over there," she tells her friend. "Somebody stole mine and got away with it, so I won't get in trouble either."
- Carlton tells his dad he got a low grade in his foreign language class last year because he was taking Spanish. He says that because he is taking German now his grade will be much higher.
- Nathan asks Janis if she will take him to the airport, and Janis tells him about her most recent flight and how long it was delayed.
- Becky has an uncle in the Senate, and she tells him she thinks it's pretty cool that he can create a law all by himself.

12. Joe says that since a bus uses more fuel than a car, all the buses in the world use more fuel than all the cars in the world.
13. Anna says she would like to talk with her sister about the fight they had, and her sister compliments her shoes.

Answers: 1—E; 2—A; 3—F; 4—G; 5—D; 6—D; 7—C; 8—B; 9—C; 10—E; 11—H; 12—G; 13—E

Exercises for Errors of Attack

Directions: Match the type of error with the example.

A. Poisoning the well

B. Arguing against the person

C. Appealing to force

- Joyce and Kevin are talking about which cars are the best ones to buy. "I think that Hondas are the best cars ever!" says Joyce. "Whatever," says Kevin, "you're just saying that because you have a Honda." "No, really," says Joyce, "I read an article in Consumer Reports about how well made they are, and my family has had ours for fifteen years, and it's still running!" "Consumer Reports is biased, and your car is the exception to the rule," says Kevin. "Hondas are not the best cars to buy."
- Yvette and Gilda are talking about the whaling ships in Japan. Yvette says, "Our Navy should just go and take them all off the ships and put them in jail. That would stop whaling pretty fast."
- Kendra says she doesn't like watching movies with a particular actress in them because that actress is really stuck up.
- When Jorge refuses to help Brian cheat on a test, Brian says he will get his friends to beat Jorge up.
- In a discussion about the implied powers of the Constitution, April tells a classmate that he is wrong because he isn't even from the United States and can't know more than she can.
- Jesse says she doesn't like a particular restaurant in town because she knows someone who works there, and that person isn't very pretty.
- Gracie and her friend Shameed are discussing which candidate will win the upcoming election. "Senator Evans is going to win, I just know it!" says Shameed. "But all the polls show that Governor Moreno is way ahead," objects Gracie. "Polls are so flawed," replies Shameed. "They can't predict the outcome of an election." When Gracie shows Shameed the results of a study that predicts that Governor Moreno will win based on his optimistic attitude and the positive tone of his comments, Shameed says, "The author of that study is probably a member of Governor Moreno's party. I'm sure it's biased."

Answers: 1—A; 2—C; 3—B; 4—C; 5—B; 6—B; 7—A

Directions: Match the type of error with the example.

A. Poisoning the well

B. Arguing against the person

C. Appealing to force

- Alice wants to win the upcoming talent show, but her mom tells her that she probably won't unless she starts practicing. "I don't have to practice because I'm so talented," says Alice. "I just know I'll win, and you can't make me think any differently." Even after Alice's mom

explains that scientists have done studies about the effects of practice on becoming good at a skill, Alice says, "Science has been wrong before. I'm naturally talented, and I'm sure I'll do fine."

2. Finn and Danny are in a disagreement about which presidential candidate is the best. Finn says, "The only reason you're voting for him is that you're an idiot."
3. Zelda is giving a report on wildfires. She says that wildfires occur mainly in the fall because that is when plants are dying and things are drying out. Another student raises his hand and says, "I read a report that shows that March and April have the highest number of wildfires." Zelda replies, "That's impossible. Those are spring months, and it rains in the spring."
4. Anthony's basketball team has a strong rivalry with another school, and when the game begins, members of the other school's team begin ridiculing Anthony and his teammates. To get them to stop, Anthony elbows one of the players in the nose.
5. Virginia tells Keith that she doesn't want to be Dana's science partner because Dana is uncool.
6. Scott says he will tell their mother about his brother getting a failing grade in a class if he doesn't help him take out the trash.
7. Lucas says he will punch Marty if he doesn't stop talking.

Answers: 1—A; 2—B; 3—A; 4—C; 5—B; 6—C; 7—C

Exercises for Errors of Weak Reference

Directions: Match the type of error with the example.

A. Using sources that reflect bias

D. Appealing to the people

B. Using sources that lack credibility

E. Appealing to emotion

C. Appealing to authority

1. Toni says she thinks the government is corrupt because she read a book about it. Her friend points out that the topic of the book was corrupt figures and events in the history of the U.S. government.
2. Dennis tells his dad he is going to ask Clara to the school dance instead of Cindy. His dad asks, "Why? I thought you really liked Cindy." Dennis says, "I do, but everyone else likes Clara better. I'll have a better time with her because everyone likes her much more than Cindy."
3. Vince tells his coach that he can't practice that day because he had a really bad day: his girlfriend broke up with him, he got a failing grade on a test, and his dad said he won't let him go camping on the weekend with friends.
4. Chad tells Mickey that he knows that people swallow spiders in their sleep. "My dad told me about it. He saw a huge spider in his bedroom, so he knows."
5. Even though not many people she knows wear them, Monique knows that scarves with bright bold colors are very in style right now because there was an article in Vogue about it.
6. Terrence tells his friend that he really needs to borrow his car for the day. "I have so much to do for my sister's birthday party, and there's just no way I can get it done without a car. I don't want her to be disappointed that her party was a flop," he says.
7. Grace says that she knows that there is going to be an enormous volcanic eruption in Yellowstone Park in the next fifty years because that is what the scientist and professor said on the documentary she watched last night.
8. Carlos has recently moved to another city, and even though he likes the football team from his old home better, he wears the colors of the football team where he lives now because otherwise he would stick out and people would make fun of him.
9. Lupida says she has decided which candidate to vote for because she saw a political ad about all of the poor decisions one of the candidates made. "I never realized what a difference there was between the two of them," she says.
10. Jane says that a particular shoe company makes the best shoes because they have the highest national sales.
11. Mike says that he knows that the new diet he is on will work because a doctor endorses it.
12. When Burt asks his mom if he can go to the beach with friends he says, "I studied really hard

this week, and I missed all my favorite TV shows because of it. I didn't even go out for pizza with the team after we won!"

13. Robin tells her sister she shouldn't wear clothes with cartoon animals on them anymore. Her sister says she likes the cartoon animals, and Robin says, "But everyone will think you're a dork."

Answers: 1—A; 2—D; 3—E; 4—B; 5—C; 6—E; 7—C; 8—D; 9—A; 10—D; 11—C; 12—E; 13—D

Directions: Match the type of error with the example.

- | | |
|--|----------------------------|
| A. Using sources that reflect bias | D. Appealing to the people |
| B. Using sources that lack credibility | E. Appealing to emotion |
| C. Appealing to authority | |

- Sarah always chooses the movies she goes to see based on what others she knows have said and on what the reviewers on her favorite website say.
- Heath tells Vick that military submarines have air conditioning. Vick asks how he would know that. "My mom was on a submarine in Hawaii once to look at the fish. She said it was freezing in there," Heath says.
- Andrea hears a senator talking about why a wildlife protection bill would be bad. After doing a little research she finds out that he has been trying to get federal money to drill for oil on the land that would be protected by the wildlife bill.
- Dale's parents want him to learn Hebrew as part of his religious education. However, he doesn't like the classes and tells his mother, "None of my friends at school speak Hebrew. Probably no one in the whole school speaks it. It's totally pointless."
- Wayne decides to donate money to a charity because he saw a commercial that featured animals that looked really dirty and sad.
- Paul says he knows who the next head coach of a professional football team is going to be because he knows the team's owner.
- Roger says he knows a rookie soccer player is going to be really famous someday because a legendary player once said that the rookie was one of the best players he had ever seen.
- Arda said she heard from a friend who took a pre-med class that in ten years heart transplants will be done with mechanical hearts.
- Caroline tells everyone in her sorority that a certain kind of energy drink is much healthier and much longer lasting than others. She knows this because she just got a job as a sales representative for that company, and she learned about it in training.

10. Nancy tells the principal that she only got in a fight because the girl she hit said something so mean that it almost made her cry.
11. Wilson is certain it is going to rain today because the local news weatherman said it would.
12. Greg says he is the best player on the team, and he knows this because his dad said so.
13. Murray asks his girlfriend if she will go get him something to eat. "I would go, but I'm really sick," he says. "I think I have a high fever, and I get woozy when I stand up."

Answers: 1—D; 2—B; 3—A; 4—D; 5—E; 6—C; 7—C; 8—B; 9—A; 10—E; 11—C; 12—A; 13—E

Exercises for Errors of Misinformation

Directions: Match the type of error with the example.

A. Confusing the facts

B. Misapplying a concept or generalization

1. A new prime minister has taken office in the United Kingdom, and Winona says she is glad he was elected. Leticia tells her he wasn't elected, he was appointed by the Queen.
2. Annabelle is looking at pictures with her mom. Last Halloween she dressed up as a clown, and when she sees a picture taken years before of her cousin dressed as a clown says, "Look Mom, that's me."
3. Porter says that Madison can't be the capital of Wisconsin. When his teacher asks why he believes this he says, "Because Madison isn't in the middle of the state, and in the Midwest, capital cities are generally in the middle of the state."
4. Janet is at a large picnic and someone tells her one of the dishes is made with chicken. She generally likes chicken, so she takes a huge helping. When she tastes it though, she finds she doesn't like it at all.

Answers: 1—A; 2—A; 3—B; 4—B

Directions: Match the type of error with the example.

A. Confusing the facts

B. Misapplying a concept or generalization

1. Holly sees a clip of a comedian doing a fundraiser for breast cancer. She says: "The weird thing is that he wasn't funny. He's been funny in everything I've seen before."
2. Janine wants to call her older sister who lives in New York. Janine lives in California, so she calculates that her sister is two hours later than her because she is two time zones away from her. She figures that since it is 8 p.m. in California, it is 10 p.m. in New York, and she calls her sister. Her sister answers sleepily, and Janine asks why. "It's 11 p.m. here," her sister says. "I thought it was 10," says Janine. "I think you forgot that the Mountain Region has a time zone, so I'm three hours ahead of you," says her sister.
3. Dorian is eating oatmeal for lunch, and a friend comments that it is a strange choice. Dorian says, "I saw a commercial that says that oatmeal gives you energy, so I'm eating it all three meals of the day and before I swim in the meet on Saturday." His friend tells him he doesn't think it really works that way.
4. Thomas meets some students from a chess team at another school. Later he tells his friends that all of them were rich. When asked how he knows this he replies, "They go to Central. All kids who go to Central are rich."

Answers: 1—B; 2—A; 3—A; 4—B

Exercises for Probabilistic Errors

Directions: Match the type of error with the example.

A. Regression toward the mean

C. Base rates

B. Conjunction

D. Cumulative nature of risk

- Jacob's family is going on vacation. "When does your flight leave?" his friend Isabella asks. "Oh, we're not flying because it's so dangerous," says Jacob, "we're going to drive instead."
- Ethan and Alexander are looking at data about the number of traffic accidents at a certain intersection. It seems that there are, on average, two accidents there every week. They look at the past week and notice that there have been five accidents in that time. "Oh, no!" says Ethan. "Accidents are getting worse at this intersection! I bet there will be even more this week."
- Emma is talking on her cell phone while she drives to school. Her friend Olivia tells her, "You know, you're going to get in an accident if you keep talking on your cell phone while you're driving." Emma replies, "That's silly. I've talked on my phone while I drive to school almost every day for the past two years, and I've never been in an accident."
- Aiden and Sophia are at a baseball game. The home team's brand new rookie is up to bat, and he hits a line drive to left field for a double. "Wow," says Aiden, "he's an amazing player! I bet he'll get a home run next time he's up to bat."
- After a nighttime hit-and-run traffic accident, a witness testified that the car driven by the perpetrator was blue. Statistics show that 60 percent of the cars in the city are blue. Police tested to witness's ability to correctly identify car color in nighttime conditions, and the witness was able to correctly identify the color of the car 80 percent of the time. Police determined that there was an 80 percent chance that the witness was correct.
- As a part of a service project, Noah has been volunteering as a piano teacher at a local recreation center. He gives lessons to several elementary-age students each week. During lunch, he and his friend Jack are talking about his students. "Do you think any of them will be famous someday?" asks Jack. "I don't know," says Noah. "I guess some of them might grow up to be musicians." "It's more likely that they'll grow up to be musicians and be famous, because you're such a good teacher," says Jack with a smile.
- Addison notices that her friend Logan has his birthday, home address, and phone number posted on his Facebook page. She tells him, "That's risky. Unless you change your privacy settings, somebody could use that information against you." Logan replies, "Quit worrying. I've had all that posted for two months now, and nothing bad has happened."
- Emily and Abigail are discussing the likelihood of North Korea invading South Korea in the next year. "I think that North Korea will invade South Korea this year," says Abigail. "It's more likely that North Korea will invade South Korea and that the United States will intervene," says Emily.

9. Taylor has been teaching his little brother to jump his skateboard, but he can't understand his progress. Every time his brother does a really good jump, Taylor gets really excited and expects his next one to be even better. But usually, the jump after the really good one is just average.
10. Chris is helping his mom and dad plan their family vacation. "I love going to the Caribbean," he says. "Yes," says his mom, "but going during hurricane season is so risky. I'd prefer not to go there this fall." "But we've gone to the Caribbean in September many times before, and we've never had any problems with hurricanes," his dad says. "Why should we have any trouble on this trip?"
11. There are 75 percent of students at Alexis's school who have a grade point average between 1.0 and 3.0. There are 90 percent of the students in the chess club, however, that have GPAs above 3.5. Alexis knows that Ashley is in the chess club, so she tells her friend Andy, "There's a 90 percent probability that her GPA is higher than 3.5. "
12. On Valentine's Day, Jane is hoping to get valentines from Bobby and Sam. She tells her friend, Rita, that she hopes she gets a valentine from at least one of them. "It's more likely you'll get valentines from both of them," says Rita, with a wink.

Answers: 1—C; 2—A; 3—D; 4—A; 5—C; 6—B; 7—D; 8—B; 9—A; 10—D; 11—C; 12—B

Directions: Match the type of error with the example.

| | |
|-------------------------------|------------------------------|
| A. Regression toward the mean | C. Base rates |
| B. Conjunction | D. Cumulative nature of risk |

1. Will's dad came into his room one evening with bad news. "I'm sorry, but your mom just ran over your bike," he said. "We've told you many times before not to leave it in the middle of the garage floor." "You're kidding!" said Will. "I didn't think it would ever really happen. I've done the same thing all my life, and my bike's never gotten destroyed before."
2. Samantha is taking the SAT on Saturday. "Have you been studying hard this week?" asks her friend Hannah "No," she says, "I haven't studied at all since the last time I took it, but I got a really high score last time, so I'm sure my score will go up!" she says.
3. Andrew and Joshua are discussing the news that the government is planning to raise the tax on cigarettes soon. "I think they probably will," says Joshua. "After all, smoking is bad for your health." "It's more likely that they will raise the tax and a lot of people will quit smoking," says Andrew. "The tax will make smoking bad for your health and your finances."
4. Nick is talking to Ava about people who throw birthday parties for their pets. "I read a study that said that half of all people throw birthday parties for their pets," says Ava. "That means that every second person you meet has thrown a pet party." "Wait a minute," says Nick. "I saw that study too and it said that half of all people with pets have thrown a party for

their pets. But not everybody owns a pet, so it would be a smaller percentage of the entire population that has thrown a pet party."

5. There are 5 percent of women in Dylan's city who are doctors, however, his friend's mother works at a company in which 80 percent of the employees are doctors. When his parents ask what his friend's mother does for a living, he replies that there is an 80 percent chance that she is a doctor.
6. Grace's dad is filling out an application for life insurance. "It asks if I've ever been skydiving," he says. "That's ridiculous. I've been skydiving over twenty times, and nothing has ever gone wrong. They shouldn't use that to calculate premiums for life insurance."
7. A strong storm system is moving toward the area where Zack and Steven live. "The sky looks really dark," says Zack. "I bet we'll get some hail this afternoon." Steven replies, "Most likely we'll get both rain and hail."
8. Justin and Jose are talking about Justin's new baby cousin. "She's going to be six-feet tall!" says Justin. "What makes you say that?" asks Jose. "Well, my aunt and uncle are both five feet eleven, so I'm sure she'll be taller than both of them," says Justin.
9. Ron and Allen are talking about their football team. "Our quarterback is usually great, but today he had a horrible game. He threw for ten yards total and was intercepted three times!" says Allen. Ron replies, "Yeah, I hope the coach replaces him. If he had such a bad game today, he's sure to have an even worse one next week."
10. Pat's friend Melissa tells her that she should wear a helmet when she rides her bike. "But I've never fallen and hit my head when I was riding my bike," she says. "Why wear a goofy-looking helmet if I don't need it?"
11. Maria and Shealyne are talking about the new girl in their math class. "She's from California," says Maria, "I bet that means she likes to surf." "It's more likely that she likes to surf and that's she's met a lot of movie stars," says Shealyne.
12. Tony's grandfather had to go to the hospital because he was having chest pains. Tony says to Mark, "I think it is probably heart disease. After all, 36.9 percent of the population had heart disease last year."

Answers: 1—D; 2—A; 3—B; 4—C; 5—C; 6—D; 7—B; 8—A; 9—A; 10—D; 11—B; 12—C

Exercises for Deductive Conclusions

Directions: Decide whether each deductive conclusion is more likely to be true or not true.

A. True

B. Not true

1. **Foundational premise:** All Americans wear jeans.
Minor premise: Jacob is an American.
Deductive conclusion: Jacob wears jeans.
2. **Foundational premise:** Identical twins have identical genes.
Minor premise: Sometimes identical twins have different IQ scores.
Deductive conclusion: IQ is not wholly dependent on genetic makeup.
3. **Foundational premise:** In tennis, the person who wins six games in a set wins the set.
Minor premise: In this set, I won six games, and my opponent won five games.
Deductive conclusion: I won the set.
4. **Foundational premise:** Conservatives always vote Republican.
Minor premise: Susy is conservative.
Deductive conclusion: Susy will always vote Republican.
5. **Foundational premise:** There is a law against smoking in public restaurants in California.
Minor premise: We are in a public restaurant in California.
Deductive conclusion: You should not smoke here.
6. **Foundational premise:** If you make money, you should pay taxes on it.
Minor premise: I made money this year.
Deductive conclusion: I should pay taxes on the money I made.
7. **Foundational premise:** Dogs have four legs.
Minor premise: Fido has three legs.
Deductive conclusion: Fido cannot be a dog.
8. **Foundational premise:** Doctors require more higher education than other professions.
Minor premise: I want to be in college for the shortest amount of time possible.
Deductive conclusion: I should not plan to become a doctor.
9. **Foundational premise:** Ice cream will melt if it gets warm.
Minor premise: My ice cream is warm.

Deductive conclusion: My ice cream is melting.

Answers: 1—B; 2—A; 3—B; 4—B; 5—A; 6—A; 7—B; 8—A; 9—A

Directions: Decide whether each deductive conclusion is more likely to be true or not true.

| A. True | B. Not true |
|---------|-------------|
|---------|-------------|

- Foundational premise:** All birds can fly.

Minor premise: Leroy is a bird.

Deductive conclusion: Leroy can fly.
- Foundational premise:** Taking something without paying for it is against the law.

Minor premise: I took a pack of gum without paying for it.

Deductive conclusion: I broke the law.
- Foundational premise:** Elephants are big and grey and only live in Africa.

Minor premise: I see a big, grey animal in India.

Deductive conclusion: This big, grey animal cannot be an elephant.
- Foundational premise:** My bank does not charge a fee for checking accounts.

Minor premise: I have a checking account at my bank.

Deductive conclusion: I do not have to pay a fee for my checking account.
- Foundational premise:** Athletes are in good physical condition.

Minor premise: Michael Phelps is an athlete.

Deductive conclusion: Michael Phelps is in good physical condition.
- Foundational premise:** Multiplying two numbers will equal a bigger number.

Minor premise: $\frac{1}{2}$ is a number.

Deductive conclusion: $\frac{1}{2} \times \frac{1}{2}$ will equal a number bigger than $\frac{1}{2}$.
- Foundational premise:** "Dr." in front of a person's name indicates that he or she has completed a doctoral degree.

Minor premise: My uncle's name is Dr. Dabbs.

Deductive conclusion: My uncle has completed a doctoral degree.
- Foundational premise:** Children do not like brussels sprouts.

Minor premise: Luke is a child.

Deductive conclusion: Luke does not like brussels sprouts.

9. **Foundational premise:** Vegetarians avoid eating meat.

Minor premise: James is a vegetarian.

Deductive conclusion: James avoids eating meat.

Answers: 1—B; 2—A; 3—B; 4—A; 5—A; 6—B; 7—A; 8—B; 9—A

Exercises for Analyzing Deductive Conclusions

Directions: First, read the deductive conclusion. Then, identify the foundational and minor premises for each statement. Finally, determine if the conclusion is more likely to be true or not true, and explain why.

1. **Deductive conclusion:** Bagels are unhealthy because they contain a lot of calories.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

2. **Deductive conclusion:** Frogs are amphibians because they live in the water and on land.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

3. **Deductive conclusion:** This is a Major League Baseball game because it has nine innings.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

4. **Deductive conclusion:** Be careful around all bees because they can sting you.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

5. **Deductive conclusion:** Saturn is a planet because it revolves around the sun.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

6. **Deductive conclusion:** People should use social-networking tools because being connected is more important than anything else.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

7. **Deductive conclusion:** Brenda was fired because she was three hours late to work every day for a month.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

8. **Deductive conclusion:** Greta is short because her parents are short.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

Answers

1. **Foundational premise:** Foods with a lot of calories are unhealthy.

Minor premise: Bagels have a lot of calories.

This conclusion is probably not true because the foundational premise is not true.

2. **Foundational premise:** Amphibians live in the water and on land.

Minor premise: Frogs live in the water and on land.

This conclusion is probably true because both the foundational and minor premises are true.

3. **Foundational premise:** Only major league baseball games have nine innings.

Minor premise: This baseball game has nine innings.

This conclusion is probably not true because the foundational premise is not true.

4. **Foundational premise:** You should be careful around things that can sting you.

Minor premise: All bees can sting you.

This conclusion is probably not true because the minor premise is not true.

5. **Foundational premise:** Things that revolve around the sun are called planets.

Minor premise: Saturn revolves around the sun.

This conclusion is probably true because both the foundational and minor premises are true.

6. **Foundational premise:** Being connected is more important than anything else.

Minor premise: Social-networking tools help people stay connected.

This conclusion is probably not true because the foundational premise is not true.

7. **Foundational premise:** If you are three hours late to work every day for a month, you will be fired.

Minor premise: Brenda was three hours late to work every day for a month.

This conclusion is probably true because both the foundational and minor premises are true.

8. **Foundational premise:** People with short parents are also short.

Minor premise: Greta's parents are short.

This conclusion is probably not true because the foundational premise is not true.

Directions: First, read the deductive conclusion. Then, identify the foundational and minor premises for each statement. Finally, determine if the conclusion is more likely to be true or not true, and explain why.

1. **Deductive conclusion:** Trees are important to life on Earth because they produce oxygen.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

2. **Deductive conclusion:** The Great Wall of China is more impressive than the Pyramids because it stretches for such a long distance.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

3. **Deductive conclusion:** This apple is sour because it is green.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

4. **Deductive conclusion:** Lake Baikal is an important lake because it contains $\frac{1}{5}$ of all the fresh water on Earth.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

5. **Deductive conclusion:** British bands are the best bands because the Beatles were British.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

6. **Deductive conclusion:** The United States of America is a democracy because the people elect leaders to represent them.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

7. **Deductive conclusion:** Johnny likes to eat steak because his father is a cattle rancher.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

8. **Deductive conclusion:** The street is wet because it just rained.

Foundational premise: _____

Minor premise: _____

This conclusion is probably true/not true (circle one) because _____

Answers

1. **Foundational premise:** Organisms that produce oxygen are important to life on Earth.

Minor premise: Trees produce oxygen.

This conclusion is probably true because both the foundational and minor premises are true.

2. **Foundational premise:** Structures that stretch for long distances are more impressive than structures that do not.

Minor premise: The Great Wall of China stretches for a long distance.

This conclusion is probably not true because the foundational premise is not true.

3. **Foundational premise:** Apples that are green are sour.

Minor premise: This apple is green.

This conclusion is probably not true because the foundational premise is not true.

4. **Foundational premise:** Lakes that hold large amounts of fresh water are important.

Minor premise: Lake Baikal holds $\frac{1}{5}$ of the fresh water on Earth.

This conclusion is probably true because both the foundational and minor premises are true.

5. **Foundational premise:** Bands from the same country as the best band are also the best bands.

Minor premise: The Beatles were the best band.

This conclusion is probably not true because both the foundational and minor premises are not true.

6. **Foundational premise:** In a democracy, the people elect leaders to represent them.

Minor premise: In the United States of America, the people elect leaders to represent them.

This conclusion is probably true because both the foundational and minor premises are true.

7. **Foundational premise:** People whose fathers are cattle ranchers like to eat steak.

Minor premise: Johnny's father is a cattle rancher.

This conclusion is probably not true because the foundational premise is not true.

8. **Foundational premise:** When it rains, the street gets wet.

Minor premise: It just rained.

This conclusion is probably true because both the foundational and minor premises are true.

Exercises for Grounds

Directions: For each of the following items, determine what type of grounds it is.

A. Common knowledge

C. Experimental evidence

B. Expert opinion

D. Factual information

1. A highly respected biologist summarizes the best actions to take to reduce deforestation in the rain forest.
2. A study found that pet owners spend about \$10,000 on the care and feeding of each of their pets over its lifetime.
3. The world's tallest man was born in Illinois in 1918 and was eight feet eleven.
4. The thermometer showed that the solution boiled at seventy-eight degrees Fahrenheit.
5. Grover Cleveland was a president of the United States.
6. The world's oldest woman lived 122 years and 164 days.
7. The U.S. ambassador to Mexico says that he thinks the United States needs to develop a consistent policy on illegal immigration.
8. Shakespeare wrote *Hamlet*.
9. Scientific studies show that people who take a placebo sometimes experience the same benefits as those receiving a treatment, a phenomenon called the placebo effect.
10. French is the primary language of France.
11. A queen bee lays 1,500 eggs per day.

Answers: 1—B; 2—C; 3—D; 4—C; 5—A; 6—D; 7—B; 8—A; 9—C; 10—A; 11—D

Directions: For each of the following items, determine what type of grounds it is.

A. Common knowledge

C. Experimental evidence

B. Expert opinion

D. Factual information

1. There are 365 days a calendar year, plus one extra every fourth year, or leap year.
2. A dermatologist says that using tissues with lotion in them can help protect the nose and lips from getting chapped when one has a cold.
3. A new study shows that infants as young as seven months have the ability to understand another person's point of view.

4. The average rainfall for the Sahara Desert is less than five inches per year.
5. The weather in Alaska is colder than the weather in Texas.
6. A study found that children who spend large amounts of time in front of screens suffer more adverse effects than children whose screen time is limited.
7. There are four different types of mangrove trees: the white mangrove, the black mangrove, the red mangrove, and the buttonwood.
8. The head of the Centers for Disease Control and Prevention recommends that people get a flu shot each year.
9. Studies show that the rhinovirus, which is often the cause of the common cold, is inactivated at temperatures above 109 degrees Fahrenheit.
10. The local weatherman says that there is an 80 percent chance of rain in the next twelve hours.
11. It is 344 miles from Chicago to Cleveland.

Answers: 1—A; 2—B; 3—C; 4—D; 5—A; 6—C; 7—D; 8—B; 9—C; 10—B; 11—D