

The book cover features a white central area surrounded by a pattern of diagonal black stripes. A solid black vertical bar is positioned on the left side of the white area.

A PRACTICE GUIDE TO PROPOSITIONAL LOGIC

IMPROVE YOUR
REASONING SKILLS

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Quiz 2

1. *Jonathan studies biochemistry.*

The proposition above is atomic.

- ☐ True
- ☐ False

2. *Jonathan does not study biochemistry.*

The proposition above is atomic.

- ☐ True
- ☐ False

3. *Jonathan and Mary study biochemistry.*

The proposition above is atomic.

- ☐ True
- ☐ False

4. *Jonathan and Mary are friends.*

The proposition above is atomic.

- ☐ True
- ☐ False

5. *I find it quite persuasive that eating meat is morally impermissible because it inflicts unnecessary suffering on animals.*

The proposition above is atomic.

- ☐ True
- ☐ False

6. *Stephanie will either visit Paris or London.*

For p =*Stephanie will visit Paris* and q =*Stephanie will visit London*, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \vee q$
- ☐ $p \rightarrow q$
- ☐ $p \leftrightarrow q$

7. *If Ben graduates with honors, he will receive a prestigious scholarship.*

For p =*Ben graduates with honors* and q =*Ben will receive a prestigious scholarship*, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \vee q$
- ☐ $p \rightarrow q$
- ☐ $p \leftrightarrow q$

8. *It is not the case that Joe will study both philosophy and math.*

For p =Joe will study philosophy and q =Joe will study math, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $\sim(p \wedge q)$
- ☐ $\sim p \wedge \sim q$
- ☐ $p \vee q$

9. *Martha and Bill will get married if and only if they truly love each other.*

For p =Martha and Bill will get married and q =Martha and Bill truly love each other, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \vee q$
- ☐ $p \rightarrow q$
- ☐ $p \leftrightarrow q$

10. *Chris will buy a new car only if he can sell his current one.*

For p =Chris buys a new car and q =Chris sells his current car, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$
- ☐ $p \leftrightarrow q$

11. *Neither Paul nor Laura is my best friend.*

For p =Paul is my best friend and q =Laura is my best friend, which of the following is the right translation of the above proposition?

- ☐ $\sim(p \vee q)$
- ☐ $\sim(p \wedge q)$
- ☐ $\sim p \vee \sim q$
- ☐ $\sim p \wedge q$

12. *Stella is a vegetarian even though she loves eating meat.*

For p =Stella is a vegetarian and q =Stella loves eating meat, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \vee q$
- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$

13. *I will share my secrets with you provided that you are trustworthy.*

For p =I share my secrets with you and q =you are trustworthy, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \vee q$
- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$

14. *I will go swimming unless it rains.*

For $p = I \text{ go swimming}$ and $q = it \text{ rains}$, which of the following is the right translation of the above proposition?

- ☐ $q \rightarrow \sim p$
- ☐ $\sim q \rightarrow p$
- ☐ $p \rightarrow \sim q$
- ☐ $\sim p \vee q$

15. *Being empathetic is a sufficient condition for being a good person.*

For $p = \text{you are empathetic}$ and $q = \text{you are a good person}$, which of the following is the right translation of the above proposition?

- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$
- ☐ $p \leftrightarrow q$
- ☐ $q \leftrightarrow p$

16. *Not lying is a necessary condition for being a good person.*

For $p = \text{you lie}$ and $q = \text{you are a good person}$, which of the following is the right translation of the above proposition?

- ☐ $\sim p \rightarrow q$
- ☐ $\sim q \rightarrow p$
- ☐ $q \rightarrow \sim p$
- ☐ $\sim p \leftrightarrow q$

17. *Matt went to the party without his wife.*

For $p = \text{Matt goes to the party}$ and $q = \text{Matt's wife goes to the party}$, which of the following is the right translation of the above proposition?

- ☐ $\sim(p \wedge q)$
- ☐ $p \wedge \sim q$
- ☐ $\sim p \vee \sim q$
- ☐ $p \rightarrow \sim q$

18. *Susan passed the exam by studying long hours.*

For $p = \text{Susan passes the exam}$ and $q = \text{Susan studies long hours}$, which of the following is the right translation of the above proposition?

- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$
- ☐ $p \leftrightarrow q$
- ☐ $p \wedge q$

19. *One could pass the exam without studying long hours.*

For $p = \text{you pass the exam}$ and $q = \text{you study long hours}$, which of the following is the right translation of the above proposition?

- ☐ $p \rightarrow \sim q$
- ☐ $q \rightarrow \sim p$
- ☐ $\sim(p \rightarrow q)$
- ☐ $\sim(q \rightarrow p)$

20. *One could make a lot of money by sacrificing their moral integrity.*

For p =you make a lot of money and q =you sacrifice your moral integrity, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$
- ☐ $p \leftrightarrow q$

21. *Having faith in God is both sufficient and necessary for achieving eternal bliss.*

For p =you have faith in God and q =you achieve eternal bliss, which of the following is the right translation of the above proposition?

- ☐ $p \wedge q$
- ☐ $p \rightarrow q$
- ☐ $q \rightarrow p$
- ☐ $p \leftrightarrow q$

22. *In order to get the job, it is essential but not sufficient that Mark performs well in the interview.*

For p =Mark gets the job and q =Mark performs well in the interview, which of the following is the right translation of the above proposition?

- ☐ $(p \rightarrow q) \wedge \sim(q \rightarrow p)$
- ☐ $(p \rightarrow q) \vee \sim(q \rightarrow p)$
- ☐ $\sim(p \rightarrow q) \wedge (q \rightarrow p)$
- ☐ $\sim(p \leftrightarrow q)$

23. *The only way to achieve professional success is by working hard and surrounding yourself with the right people.*

For p =you achieve professional success, q =you work hard and r =you surround yourself with the right people, which of the following is the right translation of the above proposition?

- ☐ $(q \wedge r) \rightarrow p$
- ☐ $p \rightarrow (q \wedge r)$
- ☐ $(q \wedge r) \leftrightarrow p$
- ☐ $p \leftrightarrow (q \wedge r)$

24. *Josephine loves Charlotte even if Charlotte doesn't love her back.*

For p =Josephine loves Charlotte and q =Charlotte loves Josephine, which of the following is the right translation of the above proposition?

- ☐ $p \rightarrow \sim q$
- ☐ $\sim q \rightarrow p$
- ☐ $p \wedge \sim q$
- ☐ $\sim(p \wedge q)$

25. *It is possible to carry out good deeds even if you don't anticipate to be rewarded.*

For p =you carry out good deeds and q =you anticipate to be rewarded for carrying out good deeds, which of the following is the right translation of the above proposition?

- ☐ $\neg q \rightarrow p$
- ☐ $p \rightarrow \neg q$
- ☐ $\neg(q \rightarrow p)$
- ☐ $\neg(p \rightarrow q)$

26. *It is not the case that money and fame will make you happy.*

For p =you have money, q =you have fame, and r =you are happy, which of the following is the right translation of the above proposition?

- ☐ $(p \wedge q) \rightarrow \neg r$
- ☐ $r \rightarrow \neg(p \wedge q)$
- ☐ $\neg((p \wedge q) \rightarrow r)$
- ☐ $\neg(r \rightarrow (p \wedge q))$

27. *You need neither money nor fame in order to be happy.*

For p =you have money, q =you have fame, and r =you are happy, which of the following is the right translation of the above proposition?

- ☐ $\neg(r \rightarrow (p \vee q))$
- ☐ $(p \wedge q) \rightarrow \neg r$
- ☐ $r \rightarrow (\neg p \wedge \neg q)$
- ☐ $\neg(p \vee q) \rightarrow r$

28. *It is not the case that romantic love presupposes sexual exclusivity nor is it true that sexual exclusivity presupposes romantic love.*

For p =romantic love is real and q =romantic partners are sexual exclusive, which of the following is the right translation of the above proposition?

- ☐ $\neg(p \leftrightarrow q)$
- ☐ $\neg(p \rightarrow q) \vee \neg(q \rightarrow p)$
- ☐ $\neg(p \rightarrow q) \wedge \neg(q \rightarrow p)$
- ☐ $\neg((p \rightarrow q) \wedge (q \rightarrow p))$

29. *If Emma receives funding, she will study philosophy; otherwise, she will look for work.*

For p =Emma receives funding, q =Emma studies philosophy, and r =Emma looks for work, which of the following is the right translation of the above proposition?

- ☐ $(p \rightarrow q) \vee (\neg p \rightarrow r)$
- ☐ $(p \rightarrow q) \wedge (\neg p \rightarrow r)$
- ☐ $p \vee r$
- ☐ $q \vee r$

30. *While you could lose weight without exercising regularly, losing weight before following a healthy diet is not possible.*

For p =you lose weight, q =you exercise regularly, and r =you follow a healthy diet, which of the following is the right translation of the above proposition?

- ☐ $(p \rightarrow q) \vee \sim(p \rightarrow r)$
- ☐ $(p \rightarrow q) \wedge \sim(p \rightarrow r)$
- ☐ $\sim(p \rightarrow q) \vee (p \rightarrow r)$
- ☐ $\sim(p \rightarrow q) \wedge (p \rightarrow r)$

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Quiz 3

1. *Either Mia is a very religious person or she has no moral integrity.*

Which of the following case(s) could refute the above statement?

- ☐ Mia is a very religious person with moral integrity
- ☐ Mia lacks moral integrity and is not very religious
- ☐ Mia is a very religious person with no moral integrity
- ☐ Mia has moral integrity and is not very religious

2. *Both Helen and Steve have faith in God.*

Which of the following case(s) could refute the above statement?

- ☐ Helen has faith in God but Steve doesn't
- ☐ Steve has faith in God but Helen doesn't
- ☐ Helen has no faith in God and Steve has no faith in God
- ☐ Helen has faith in God and Steve has faith in God

3. *If our universe is deterministic, then humans have no free will.*

Which of the following case(s) could refute the above statement?

- ☐ Humans have free will
- ☐ The universe is not deterministic
- ☐ The universe is deterministic but humans have free will
- ☐ The universe is not deterministic but humans have no free will

4. *Humans can predict the future only if the universe is deterministic.*

Which of the following case(s) could refute the above statement?

- ☐ Humans can predict the future but the universe is not deterministic
- ☐ The universe is deterministic but humans cannot predict the future
- ☐ The universe is not deterministic and humans cannot predict the future
- ☐ The universe is not deterministic

5. *Gabe has the right to vote if and only if he is 18 years of age or older.*

Which of the following case(s) could refute the above statement?

- ☐ Gabe is 16 years old and has the right to vote
- ☐ Gabe does not have the right to vote
- ☐ Gabe is 20 years old and has no right to vote
- ☐ Gabe is 16 years old

6. *Elizabeth is not an athlete student.*

Which of the following case(s) could refute the above statement?

- ☐ Elizabeth is an athlete
- ☐ Elizabeth is a student
- ☐ Elizabeth is an athlete and a student
- ☐ Elizabeth is neither an athlete nor a student

7. *Olivia doesn't care about money or professional success.*

Which of the following case(s) could refute the above statement?

- ☐ Olivia cares about money
- ☐ Olivia cares about professional success
- ☐ Olivia doesn't care about money
- ☐ Olivia cares both about money and professional success

8. *It is not the case that Oliver and James will both visit New York.*

Which of the following case(s) could refute the above statement?

- ☐ Oliver will visit New York without James
- ☐ James will visit new York without Oliver
- ☐ Neither Oliver nor James will visit new York
- ☐ Both Oliver and James will visit new York

9. *If one doesn't have kids, then one doesn't love kids.*

Which of the following case(s) could refute the above statement?

- ☐ A parent who hates their kid
- ☐ A childless person who loves kids
- ☐ A parent who loves their kid
- ☐ A childless person who hates kids

10. *Passing the final exam is necessary for passing the class.*

Which of the following case(s) could refute the above statement?

- ☐ Student A passes the final exam but fails the class
- ☐ Student B doesn't pass the final exam or the class
- ☐ Student C fails the final exam but passes the class
- ☐ Student D passes both the final exam and the class

11. *Passing the final exam is both sufficient and necessary for passing the class.*

Which of the following case(s) could refute the above statement?

- ☐ Student A passes the final exam but fails the class
- ☐ Student B doesn't pass the final exam or the class
- ☐ Student C fails the final exam but passes the class
- ☐ Student D passes both the final exam and the class

12. *Henry loves kids even though he is childless.*

Which of the following case(s) could refute the above statement?

- ☐ Henry loves kids
- ☐ Henry doesn't love kids
- ☐ Henry is childless
- ☐ Henry has a son

13. *Unless Claudio receives a scholarship, he will not study medicine.*

Which of the following case(s) could refute the above statement?

- ☐ Claudio received a scholarship and studies medicine
- ☐ Claudio studies medicine without receiving a scholarship
- ☐ Claudio received a scholarship but doesn't study medicine
- ☐ Claudio doesn't study medicine nor did he receive a scholarship

14. *If it's sunny outside, Avia will go for a walk; otherwise, she will watch a movie at home.*

Which of the following case(s) could refute the above statement?

- ☐ It's sunny outside and Avia is not going for a walk
- ☐ It's not sunny outside and Avia is not watching a movie at home
- ☐ It's sunny outside and Avia is not watching a movie at home
- ☐ It's not sunny outside and Avia is not going for a walk

15. *William passed the logic exam without attending any private instruction.*

Which of the following case(s) could refute the above statement?

- ☐ William didn't attend any private instruction in logic and failed the exam
- ☐ William didn't attend any private instruction in logic and passed the exam
- ☐ William attended private instruction in logic and passed the exam
- ☐ William attended private instruction in logic and failed the exam

16. *Kristin passed the logic exam by cheating.*

Which of the following case(s) could refute the above statement?

- ☐ Kristin failed the logic exam
- ☐ Kristin didn't cheat on the logic exam
- ☐ Kristin passed the logic exam
- ☐ Kristin cheated on the logic exam

17. *If John and Lucas go to the party, Mary will go as well.*

Which of the following case(s) could refute the above statement?

- ☐ John, Lucas, and Mary all went to the party
- ☐ Only John and Mary went to the party
- ☐ Only Mary went to the party
- ☐ Only John and Lucas went to the party

18. *If either John or Lucas goes to the party, Mary will go as well.*

Which of the following case(s) could refute the above statement?

- ☐ Only John went to the party
- ☐ Only Lucas went to the party
- ☐ Only Mary went to the party
- ☐ Only John and Lucas went to the party

19. *In order for Mary to go to the party, it is essential that both John and Lucas are going.*

Which of the following case(s) could refute the above statement?

- ☐ Only John went to the party
- ☐ Only Lucas went to the party
- ☐ Only Mary went to the party
- ☐ Only Mary and John went to the party

20. *In order for Mary to go to the party, it is essential that either John or Lucas is going.*

Which of the following case(s) could refute the above statement?

- ☐ Only John went to the party
- ☐ Only Lucas went to the party
- ☐ Only Mary went to the party
- ☐ Only Mary and John went to the party

21. *Mary will go to the party if and only if John and Lucas are both going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only John went to the party
- ☐ Only John and Lucas went to the party
- ☐ Only Mary and Lucas went to the party

22. *Mary will go to the party if and only if either John or Lucas is going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only Lucas went to the party
- ☐ Only John and Lucas went to the party
- ☐ Only Mary and John went to the party

23. *Unless Mary goes to the party, John and Lucas are both going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only John went to the party
- ☐ Only John and Lucas went to the party
- ☐ No one went to the party

24. *John or Lucas will go to the party, unless Mary is not going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only Lucas went to the party
- ☐ Only Mary and John went to the party
- ☐ No one went to the party

25. *Unless John and Lucas both go to the party, Mary is not going.*

Which of the following case(s) could refute the above statement?

- ☐ Only John went to the party
- ☐ Only Mary went to the party
- ☐ Only John and Lucas went to the party
- ☐ Only Mary and John went to the party

26. *Mary will go to the party, unless either John or Lucas is going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only John went to the party
- ☐ Only Mary and Lucas went to the party
- ☐ No one went to the party

27. *In order for John and Lucas to go to the party, it is enough that Mary and Sophia are going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Sophia went to the party
- ☐ Only Mary and Sophia went to the party
- ☐ Only John and Lucas went to the party
- ☐ No one went to the party

28. *In order for either Mary or Sophia to go to the party, it is necessary that John and Lucas are both going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only John went to the party
- ☐ Only John and Lucas went to the party
- ☐ Only Mary and Lucas went to the party

29. *Mary and John will both go to the party if and only if Sophia is going but without Lucas.*

Which of the following case(s) could refute the above statement?

- ☐ Only Mary went to the party
- ☐ Only Sophia went to the party
- ☐ Only Lucas went to the party
- ☐ Everyone went to the party

30. *Unless Mary or Lucas goes to the party, neither Sophia nor John is going.*

Which of the following case(s) could refute the above statement?

- ☐ Only Lucas went to the party
- ☐ Only Sophia went to the party
- ☐ No one went to the party
- ☐ Everyone went to the party

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Quiz 4

1. *Both Lily and Grace are American citizens.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Lily is an American citizen
- ☐ Grace is an American citizen
- ☐ Lily is not an American citizen
- ☐ Grace is not an American citizen
- ☐ We can't determine

2. *Either Lily or Grace is an American citizen.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Lily is an American citizen
- ☐ Grace is an American citizen
- ☐ Lily is not an American citizen
- ☐ Grace is not an American citizen
- ☐ We can't determine

3. *Neither Lily nor Grace is an American citizen.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Lily is an American citizen
- ☐ Lily is not an American citizen
- ☐ Grace is an American citizen
- ☐ Grace is not an American citizen
- ☐ We can't determine

4. *It is not the case that both Lily and Grace are American citizens.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Lily is an American citizen
- ☐ Lily is not an American citizen
- ☐ Grace is an American citizen
- ☐ Grace is not an American citizen
- ☐ We can't determine

5. *It is not the case that either Lily or Grace is an American citizen.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Lily is an American citizen
- ☐ Grace is an American citizen
- ☐ Lily is not an American citizen
- ☐ Grace is not an American citizen
- ☐ We can't determine

6. *If Alexander has a strong grasp of logic, he will get a degree in philosophy.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ Alexander has a strong grasp of logic
- ☐ Alexander has a degree in philosophy
- ☐ Alexander lacks a strong grasp of logic
- ☐ Alexander doesn't have a degree in philosophy
- ☐ We can't determine

7. *If Alexander has a strong grasp of logic, he will get a degree in philosophy.*

Suppose that the above proposition is true, and that Alexander has a degree in philosophy.

Which of the following fact(s) must be true?

- ☐ Alexander has a strong grasp of logic
- ☐ Alexander lacks a strong grasp of logic
- ☐ We can't determine

8. *If Alexander has a strong grasp of logic, he will get a degree in philosophy.*

Suppose that the above proposition is true, and that Alexander doesn't get a degree in philosophy. Which of the following fact(s) must be true?

- ☐ Alexander has a strong grasp of logic
- ☐ Alexander lacks a strong grasp of logic
- ☐ We can't determine

9. *Alexander will get a degree in philosophy only if he has a strong grasp of logic.*

Suppose that the above proposition is true, and that Alexander gets a degree in philosophy. Which of the following fact(s) must be true?

- ☐ Alexander has a strong grasp of logic
- ☐ Alexander lacks a strong grasp of logic
- ☐ We can't determine

10. *Alexander will get a degree in philosophy if and only if he has a strong grasp of logic.*

Suppose that the above proposition is true, and that Alexander doesn't have a strong grasp of logic. Which of the following fact(s) must be true?

- ☐ Alexander gets a degree in philosophy
- ☐ Alexander doesn't get a degree in philosophy
- ☐ We can't determine

11. *Unless Zoe takes the LSAT, she will not get into law school.*

Suppose that the above proposition is true, and that Zoe took the LSAT. Which of the following fact(s) must be true?

- ☐ Zoe got into law school
- ☐ Zoe didn't get into law school
- ☐ We can't determine

12. *Unless Zoe takes the LSAT, she will not get into law school.*

Suppose that the above proposition is true, and that Zoe got into law school. Which of the following fact(s) must be true?

- ☐ Zoe took the LSAT
- ☐ Zoe didn't take the LSAT
- ☐ We can't determine

13. *Provided that Zoe takes the LSAT and has a GPA of at least 3.6, she will get into law school.*

Suppose that the above proposition is true, and that Zoe got into law school. Which of the following fact(s) must be true?

- ☐ Zoe took the LSAT
- ☐ Zoe didn't take the LSAT
- ☐ Zoe has a GPA of at least 3.6
- ☐ Zoe doesn't have a GPA of at least 3.6
- ☐ We can't determine

14. *Provided that Zoe takes the LSAT and has a GPA of at least 3.6, she will get into law school.*

Suppose that the above proposition is true, and that Zoe didn't get into law school. Which of the following fact(s) must be true?

- ☐ Zoe took the LSAT
- ☐ Zoe didn't take the LSAT
- ☐ Zoe has a GPA of at least 3.6
- ☐ Zoe doesn't have a GPA of at least 3.6
- ☐ We can't determine

15. *Provided that Zoe takes the LSAT or has a GPA of at least 3.6, she will get into law school.*

Suppose that the above proposition is true, and that Zoe didn't get into law school. Which of the following fact(s) must be true?

- ☐ Zoe took the LSAT
- ☐ Zoe didn't take the LSAT
- ☐ Zoe has a GPA of at least 3.6
- ☐ Zoe doesn't have a GPA of at least 3.6
- ☐ We can't determine

16. *In order for abortion to be legal, it has to be the case that the fetus is not a person and the pregnant has the right to bodily autonomy.*

Suppose that the above proposition is true, and that abortion is legal. Which of the following fact(s) must be true?

- ☐ The fetus is a person
- ☐ The fetus is not a person
- ☐ The pregnant has the right to bodily autonomy
- ☐ The pregnant lacks the right to bodily autonomy
- ☐ We can't determine

17. *In order for abortion to be legal, it has to be the case that the fetus is not a person and the pregnant has the right to bodily autonomy.*

Suppose that the above proposition is true, and that the fetus is a person. Which of the following fact(s) must be true?

- ☐ Abortion is legal
- ☐ Abortion is not legal
- ☐ The pregnant has the right to bodily autonomy
- ☐ The pregnant lacks the right to bodily autonomy
- ☐ We can't determine

18. *In order for abortion to be legal, it has to be the case that either the fetus is not a person or the pregnant has the right to bodily autonomy.*

Suppose that the above proposition is true, and that abortion is legal. Which of the following fact(s) must be true?

- ☐ The fetus is a person
- ☐ The fetus is not a person
- ☐ The pregnant has the right to bodily autonomy
- ☐ The pregnant lacks the right to bodily autonomy
- ☐ We can't determine

19. *In order for abortion to be legal, it has to be the case that either the fetus is not a person or the pregnant has the right to bodily autonomy.*

Suppose that the above proposition is true, and that the fetus is a person. Which of the following fact(s) must be true?

- ☐ Abortion is legal
- ☐ Abortion is not legal
- ☐ The pregnant has the right to bodily autonomy
- ☐ The pregnant lacks the right to bodily autonomy
- ☐ We can't determine

20. *The death penalty is legal if and only if it effectively deters crime and is not a cruel method of punishment.*

Suppose that the above proposition is true, and that the death penalty is legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

21. *The death penalty is legal if and only if it effectively deters crime and is not a cruel method of punishment.*

Suppose that the above proposition is true, and that the death penalty is not legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

22. *The death penalty is legal if and only if it effectively deters crime or is not a cruel method of punishment.*

Suppose that the above proposition is true, and that the death penalty is legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

23. *The death penalty is legal if and only if it effectively deters crime or is not a cruel method of punishment.*

Suppose that the above proposition is true, and that the death penalty is not legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

24. *Unless the death penalty effectively deters crime and is not a cruel method of punishment, it is not legal.*

Suppose that the above proposition is true, and that the death penalty is legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

25. *Unless the death penalty effectively deters crime and is not a cruel method of punishment, it is not legal.*

Suppose that the above proposition is true, and that the death penalty is a cruel method of punishment. Which of the following fact(s) must be true?

- ☐ The death penalty is legal
- ☐ The death penalty is not legal
- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ We can't determine

26. *Unless the death penalty effectively deters crime or is not a cruel method of punishment, it is not legal.*

Suppose that the above proposition is true, and that the death penalty is legal. Which of the following fact(s) must be true?

- ☐ The death penalty effectively deters crime
- ☐ The death penalty does not effectively deter crime
- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ We can't determine

27. *Unless the death penalty effectively deters crime or is not a cruel method of punishment, it is not legal.*

Suppose that the above proposition is true, and that the death penalty does not effectively deter crime. Which of the following fact(s) must be true?

- ☐ The death penalty is a cruel method of punishment
- ☐ The death penalty is not a cruel method of punishment
- ☐ The death penalty is legal
- ☐ The death penalty is not legal
- ☐ We can't determine

28. *While our universe is deterministic, it is not the case that humans learn from the past and are capable of predicting the future.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ The universe is deterministic
- ☐ Humans learn from the past
- ☐ Humans don't learn from the past
- ☐ Humans can predict the future
- ☐ Humans can't predict the future
- ☐ We can't determine

29. *While our universe is deterministic, it is not the case that humans learn from the past or are capable of predicting the future.*

Suppose that the above proposition is true. Which of the following fact(s) must be true?

- ☐ The universe is deterministic
- ☐ Humans learn from the past
- ☐ Humans don't learn from the past
- ☐ Humans can predict the future
- ☐ Humans can't predict the future
- ☐ We can't determine

30. *In case the universe is deterministic, humans can predict the future even if they are unable to learn from the past.*

Suppose that the above proposition is true, and that the universe is deterministic. Which of the following fact(s) must be true?

- ☐ Humans can predict the future
- ☐ Humans can't predict the future
- ☐ Humans can learn from the past
- ☐ Humans can't learn from the past
- ☐ We can't determine

Submit Answers

Clear Answers

Quiz 9

1. *If the death penalty is effective at reducing crime, it must be implemented.*

The death penalty is effective at reducing crime.

Therefore, the death penalty must be implemented.

Is the above argument valid? Answer with a 'yes' or a 'no'.

2. *If the death penalty is effective at reducing crime, it must be implemented.*

The death penalty must be implemented.

Therefore, the death penalty is effective at reducing crime.

Is the above argument valid?

3. *The death penalty is not effective at reducing crime.*

If the death penalty is effective at reducing crime, it must be implemented.

Therefore, the death penalty must not be implemented.

Is the above argument valid?

4. *The death penalty must be implemented only if it is effective at reducing crime.*

The death penalty is not effective at reducing crime.

Therefore, the death penalty must not be implemented.

Is the above argument valid?

5. *The death penalty is effective at reducing crime.*

The death penalty must be implemented.

Therefore, the death penalty must be implemented if and only if it is effective at reducing crime.

Is the above argument valid?

6. *If you can prevent the death of starving children without sacrificing anything of moral significance, then you are morally required to do so.*

You can prevent the death of starving children.

Therefore, you are morally required to prevent the death of starving children.

Is the above argument valid?

7. *If you can prevent the death of starving children without sacrificing anything of moral significance, then you are morally required to do so.*

You are not morally required to prevent the death of starving children.

Therefore, you cannot prevent the death of starving children.

Is the above argument valid?

8. *You can prevent the death of starving children by donating money to famine relief organizations.*

You don't sacrifice anything of moral significance if you donate money to famine relief organizations.

Therefore, by donating money to famine relief organizations, you can prevent the death of starving children without sacrificing anything of moral significance.

Is the above argument valid?

9. *You are morally required to rescue the drowning child in the pond.*

You can effectively rescue the drowning child in the pond.

You don't make any moral sacrifices in the rescue process.

Therefore, if you can effectively rescue the drowning child in the pond without making any moral sacrifices, you are morally required to do so.

Is the above argument valid?

10. *You are morally required to rescue the drowning child in the pond.*

You can effectively rescue the drowning child in the pond.

You don't make any moral sacrifices in the rescue process.

Therefore, you are morally required to rescue the drowning child in the pond only if you can effectively do so without making moral sacrifices.

Is the above argument valid?

11. *Killing an innocent person is morally right only if it maximizes the good consequences overall.*

Killing an innocent person is morally right.

What conclusion(s) do the above premises entail?

- ☐ Killing an innocent person maximizes the good consequences overall
- ☐ Killing an innocent person does not maximize the good consequences overall
- ☐ None of the above

12. *Killing an innocent person is morally right if and only if it maximizes the good consequences overall.*

Killing an innocent person does not maximize the good consequences overall.

What conclusion(s) do the above premises entail?

- ☐ Killing an innocent person is morally right
- ☐ Killing an innocent person is not morally right
- ☐ None of the above

13. Killing an innocent person is morally right.

Killing an innocent person maximizes the good consequences overall.

What conclusion(s) do the above premises entail?

- ☐ Killing an innocent person is morally right and maximizes the good consequences overall
- ☐ If killing an innocent person maximizes the good consequences overall, it is morally right
- ☐ Killing an innocent person is morally right only if it maximizes the good consequences overall
- ☐ None of the above

14. If miracles occur, then God exists.

If God exists, I will go to heaven.

What conclusion(s) do the above premises entail?

- ☐ God exists
- ☐ If God exists, then miracles occur
- ☐ If miracles occur, then I will go to heaven
- ☐ None of the above

15. If miracles occur, then God exists.

If God exists, I will go to heaven.

I will not go to heaven.

What conclusion(s) do the above premises entail?

- ☐ Miracles do not occur
- ☐ Miracles occur
- ☐ God exists
- ☐ None of the above

16. Either determinism is true, or, we have free will.

If determinism is true, God exists.

If we have free will, God exists.

What conclusion(s) do the above premises entail?

- ☐ God exists
- ☐ If determinism is false, then we have free will
- ☐ If determinism is true, then we don't have free will
- ☐ None of the above

17. If determinism is true and God exists, then we do have free will.

If determinism is true and God does not exist, then we don't have free will.

What conclusion(s) do the above premises entail?

- ☐ God's existence is necessary for having free will
- ☐ God's existence is sufficient for having free will
- ☐ We have free will only if determinism is false
- ☐ None of the above

18. *If the benefits of life outweigh the harms of life and death has minimal disvalue, then bringing a new person into life is morally permissible.*

Bringing a new person into life is not morally permissible.

What conclusion(s) do the above premises entail?

- ☐ The benefits of life do not outweigh the harms of life
- ☐ Death has tremendous disvalue
- ☐ While death has minimal disvalue, the benefits of life do not outweigh the harms of life
- ☐ None of the above

19. *I will bring a new person into existence even though that is not necessary for the survival of the human species.*

Bringing a new person into existence is not morally permissible.

What conclusion(s) do the above premises entail?

- ☐ The human species will die out soon
- ☐ The benefits of life do not outweigh the harms of life
- ☐ Death has minimal disvalue
- ☐ None of the above

20. *Either God exists, or, life has no meaning.*

If God exists, then miracles occur.

If life has no meaning, then God exists.

What conclusion(s) do the above premises entail?

- ☐ I will go to heaven only if God exists
- ☐ God exists
- ☐ Miracles occur
- ☐ None of the above

21. *Life has no meaning unless humans live forever.*

Therefore, life has no meaning.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ Humans live forever
- ☐ Humans don't live forever
- ☐ Either life has meaning, or, it doesn't
- ☐ None of the above

22. *If God exists and humans live forever, then life is meaningful.*

Therefore, life is not meaningful.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ God doesn't exist
- ☐ Humans don't live forever
- ☐ Either God doesn't exist or humans don't live forever
- ☐ None of the above

23. *If God exists and humans live forever, then life is meaningful.*

Therefore, humans don't live forever.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ Life is meaningless
- ☐ Life is meaningless even though God exists
- ☐ God exists and life is meaningful
- ☐ None of the above

24. *Giving money to charity organizations prevents immense suffering.*

Therefore, giving money to charity organizations is morally obligatory.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ An action is morally obligatory only if it prevents immense suffering
- ☐ If an action prevents immense suffering, it is morally obligatory
- ☐ An action is morally obligatory if and only if it prevents immense suffering
- ☐ None of the above

25. *Giving money to charity organizations does not prevent immense suffering.*

Therefore, giving money to charity organizations is not morally obligatory.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ Either an action prevents immense suffering, or, it is not morally obligatory
- ☐ If an action prevents immense suffering, it is morally obligatory
- ☐ An action is morally obligatory only if it prevents immense suffering
- ☐ None of the above

26. *The moral law is objective only if an omnipotent God exists.*

Therefore, the moral law is not objective.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ God does not exist
- ☐ God exists but he is not omnipotent
- ☐ The moral law is either objective or subjective
- ☐ None of the above

27. *The moral law is objective provided that either God exists or that acting morally has been necessary for the survival of the human species.*

Therefore, the moral law is objective.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ God exists
- ☐ Acting morally has been necessary for the survival of the human species
- ☐ Either God exists or the moral law is objective
- ☐ None of the above

28. *If you think that you exist, then you exist unless an evil demon is deceiving you.*

Therefore, you exist.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ You think that you exist
- ☐ An evil demon is deceiving you
- ☐ An evil demon is not deceiving you
- ☐ None of the above

29. *Therefore, either you exist or you don't exist.*

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ You exist
- ☐ You exist only if you think that you exist
- ☐ A contradiction is always true
- ☐ None of the above

30. *If you exist, then you think.*

An evil demon is deceiving you.

Therefore, you don't exist.

Which of the following propositions, if solely added, would make the above argument valid?

- ☐ If you don't think, then you don't exist
- ☐ An evil demon is deceiving you only if you don't think
- ☐ If you exist, then no evil demon is deceiving you
- ☐ None of the above

Submit Answers

Clear Answers

Quiz 10

1. Three single-parent families (Parent: Jonathan, child: little Brad), (Mary, little Susan), and (Penelope, little Ben) are planning their vacation. We know that Jonathan will visit London, little Susan will visit Paris on a school trip, and Penelope will visit Paris. If we want to confirm (prove that it is true) the following rule *if the parent visits London, the child will visit Paris on a school trip*, whose travel plans do we **need** to be aware of?

- ☐ Little Brad
- ☐ Mary
- ☐ Little Ben
- ☐ None of the above

2. Three single-parent families (Jonathan, little Brad), (Mary, little Susan), and (Penelope, little Ben) are planning their vacation. We know that little Brad will visit Barcelona on a school trip, Mary will visit London, and little Ben will visit Paris on a school trip. If we want to confirm the following rule *the child will visit Paris on a school trip only if the parent visits Paris*, whose travel plans do we **need** to be aware of?

- ☐ Jonathan
- ☐ Little Susan
- ☐ Penelope
- ☐ None of the above

3. Three single-parent families (Jonathan, little Brad), (Mary, little Susan), and (Penelope, little Ben) are planning their vacation. We know that Jonathan will visit London, Mary will visit Paris, Penelope will not visit London, and little Ben will not visit London. If we want to confirm the rule *the parent will visit London if and only if the child will visit London*, whose travel plans do we **need** to be aware of?

- ☐ Little Brad
- ☐ Little Susan
- ☐ Penelope
- ☐ Little Ben
- ☐ None of the above

4. Three single-parent families (Jonathan, little Brad), (Mary, little Susan), and (Penelope, little Ben) are planning their vacation. We know that little Brad will visit Paris, Mary will visit London, and little Ben will visit Barcelona. If we want to confirm the rule *either the parent or the child will visit Paris*, whose travel plans do we **need** to be aware of?

- ☐ Jonathan
- ☐ Little Susan
- ☐ Penelope
- ☐ None of the above

5. Three single-parent families (Jonathan, little Brad), (Mary, little Susan), and (Penelope, little Ben) are planning their vacation. We know that Jonathan will visit Paris, little Susan will visit London, and Penelope will visit London. If we want to confirm the rule *either the parent will visit London or the child will visit Paris*, whose travel plans do we **need** to be aware of?

- ☐ Little Brad
- ☐ Mary
- ☐ Little Ben
- ☐ None of the above

6. Three single-parent families (Harold, little Stella), (Aidan, little John), and (Jennifer, little Harry) are planning their vacation. We know that Harold will not visit New York, Aidan will visit Los Angeles, and little Harry will visit Chicago.

If we want to confirm the rule *neither the parent nor the child will visit New York*, whose travel plans do we **need** to be aware of?

- ☐ Harold
- ☐ Little Stella
- ☐ Little John
- ☐ Jennifer
- ☐ None of the above

7. Three single-parent families (Harold, little Stella), (Aidan, little John), and (Jennifer, little Harry) are planning their vacation. We know that Harold will visit New York, Aidan will visit Los Angeles, Jennifer will not visit New York, and little Harry will not visit Los Angeles.

If we want to confirm the rule *if the parent visits New York or Chicago, then the child will visit Los Angeles*, whose travel plans do we **need** to be aware of?

- ☐ Little Stella
- ☐ Little John
- ☐ Jennifer
- ☐ Little Harry
- ☐ None of the above

8. Three single-parent families (Harold, little Stella), (Aidan, little John), and (Jennifer, little Harry) are planning their vacation. We know that Harold will visit New York, little John will visit Chicago, and little Harry will visit Los Angeles.

If we want to confirm the rule *the parent will visit Los Angeles only if the child visits New York or Chicago*, whose travel plans do we **need** to be aware of?

- ☐ Little Stella
- ☐ Aidan
- ☐ Jennifer
- ☐ None of the above

9. Three single-parent families (Harold, little Stella), (Aidan, little John), and (Jennifer, little Harry) are planning their vacation. We know that little Stella will visit Los Angeles, little John will visit Chicago, and Jennifer will visit New York. If we want to confirm the rule *if the child visits neither Los Angeles nor Chicago, then the parent will visit New York*, whose travel plans do we **need** to be aware of?

- ☐ Harold
- ☐ Aidan
- ☐ Little Harry
- ☐ None of the above

10. Three single-parent families (Harold, little Stella), (Aidan, little John), and (Jennifer, little Harry) are planning their vacation. We know that Harold will visit Los Angeles, little John will visit New York, and Jennifer will not visit New York.

If we want to confirm the rule *the parent will visit New York only if the child visits neither Los Angeles nor Chicago*, whose travel plans do we **need** to be aware of?

- ☐ Little Stella
- ☐ Aidan
- ☐ Jennifer
- ☐ Little Harry
- ☐ None of the above

11. Three single-parent families (Kevin, little Adam), (Ruth, little Laura), and (Alexia, little Ian) are planning their vacation. We know that Kevin will visit Tokyo, Ruth will visit Delhi, Alexia will not visit Tokyo, and little Ian will visit Delhi. If we want to confirm the following rule *the parent will visit either Tokyo or Shanghai if and only if the child will visit neither Tokyo nor Delhi*, whose travel plans do we **need** to be aware of?

- ☐ Little Adam
- ☐ Little Laura
- ☐ Alexia
- ☐ None of the above

12. Three single-parent families (Kevin, little Adam), (Ruth, little Laura), and (Alexia, little Ian) are planning their vacation. We know that Kevin will visit Shanghai, Ruth will not visit Tokyo, little Laura will visit Shanghai, and little Ian will visit Shanghai. If we want to confirm the rule *in order for the child to visit Shanghai it is sufficient but not necessary that the parent will visit Tokyo*, whose travel plans do we **need** to be aware of?

- ☐ Little Adam
- ☐ Ruth
- ☐ Alexia
- ☐ None of the above

13. Three single-parent families (Kevin, little Adam), (Ruth, little Laura), and (Alexia, little Ian) are planning their vacation. We know that Kevin will visit Tokyo, little Laura will visit Delhi, Alexia will visit Shanghai, and little Ian will not visit Tokyo. If we want to confirm the rule *it is both sufficient and necessary that the child will visit Tokyo in order for the parent to visit Delhi*, whose travel plans do we **need** to be aware of?

- ☐ Little Adam
- ☐ Ruth
- ☐ Little Ian
- ☐ None of the above

14. Three single-parent families (Kevin, little Adam), (Ruth, little Laura), and (Alexia, little Ian) are planning their vacation. We know that little Adam will visit Delhi, Ruth will not visit Shanghai, and Alexia will visit Beijing. If we want to confirm the rule *either the parent will visit Tokyo or Delhi, or the parent will visit Shanghai but only if the child visits Delhi*, whose travel plans do we **need** to be aware of?

- ☐ Kevin
- ☐ Ruth
- ☐ Little Laura
- ☐ Little Ian
- ☐ None of the above

15. Three single-parent families (Kevin, little Adam), (Ruth, little Laura), and (Alexia, little Ian) are planning their vacation. We know that Kevin will not visit Tokyo, little Laura will not visit Delhi, and Alexia will visit Shanghai. If we want to confirm the rule *it is either sufficient or necessary that the parent will visit Tokyo in order for the child to visit Delhi*, whose travel plans do we **need** to be aware of?

- ☐ Kevin
- ☐ Little Adam
- ☐ Ruth
- ☐ Little Laura
- ☐ Little Ian
- ☐ None of the above

16. Three pairs of friends (Sophia, Amelia), (Ben, Liam), and (Mary, James) are planning their vacation. We know that Sophia will visit Rome, Ben will visit Brussels, and James will visit Berlin. If we want to confirm the rule *at least one of the two friends will visit Rome*, whose travel plans do we **need** to be aware of?

- ☐ Amelia
- ☐ Liam
- ☐ Mary
- ☐ None of the above

17. Three pairs of friends (Sophia, Amelia), (Ben, Liam), and (Mary, James) are planning their vacation. We know that Amelia will visit Rome, Liam will not visit Berlin, and Mary will not visit Brussels. If we want to confirm the rule *neither of the two friends will visit Berlin*, whose travel plans do we **need** to be aware of?

- ☐ Sophia
- ☐ Ben
- ☐ Liam
- ☐ Mary
- ☐ James
- ☐ None of the above

18. Three pairs of friends (Sophia, Amelia), (Ben, Liam), and (Mary, James) are planning their vacation. We know that Sophia will visit Brussels, Ben will visit Rome, Mary will not visit Brussels, and James will not visit Brussels. If we want to confirm the rule *at most one of the two friends will visit Brussels*, whose travel plans do we **need** to be aware of?

- ☐ Amelia
- ☐ Liam
- ☐ James
- ☐ Mary
- ☐ None of the above

19. Three pairs of friends (Sophia, Amelia), (Ben, Liam), and (Mary, James) are planning their vacation. We know that Amelia will visit Berlin, Ben will visit Rome, and Mary will visit Brussels. If we want to confirm the rule *if one friend visits Rome, then the other one will visit Berlin*, whose travel plans do we **need** to be aware of?

- ☐ Sophia
- ☐ Liam
- ☐ James
- ☐ None of the above

20. Three pairs of friends (Sophia, Amelia), (Ben, Liam), and (Mary, James) are planning their vacation. We know that Sophia will visit Berlin, Liam will visit Brussels, Mary will visit Rome, and James will not visit Berlin. If we want to confirm the rule *one friend will visit Berlin only if the other one visits Brussels*, whose travel plans do we **need** to be aware of?

- ☐ Amelia
- ☐ Ben
- ☐ James
- ☐ None of the above

21. Three pairs of friends (Rebecca, Tina), (Stephanie, Erik), and (Jimmy, Dave) are planning their vacation. We know that Rebecca will visit Nicosia, Stephanie will visit Athens, and Jimmy will visit Chania. If we want to confirm the rule *if one friend visits Athens or Chania, the other one will visit Nicosia*, whose travel plans do we **need** to be aware of?

- ☐ Tina
- ☐ Erik
- ☐ Dave
- ☐ None of the above

22. Three pairs of friends (Rebecca, Tina), (Stephanie, Erik), and (Jimmy, Dave) are planning their vacation. We know that Tina will visit Athens, Erik will visit Nicosia, and Dave will visit Limassol. If we want to confirm the rule *one friend will visit Chania only if the other one visits Athens or Nicosia*, whose travel plans do we **need** to be aware of?

- ☐ Rebecca
- ☐ Stephanie
- ☐ Jimmy
- ☐ None of the above

23. Three pairs of friends (Rebecca, Tina), (Stephanie, Erik), and (Jimmy, Dave) are planning their vacation. We know that Rebecca will visit Athens, Erik will visit Chania, and Jimmy will visit Nicosia. If we want to confirm the rule *if one friend doesn't visit Chania or Athens, the other one will visit Nicosia*, whose travel plans do we **need** to be aware of?

- ☐ Tina
- ☐ Stephanie
- ☐ Dave
- ☐ None of the above

24. Three pairs of friends (Rebecca, Tina), (Stephanie, Erik), and (Jimmy, Dave) are planning their vacation. We know that Tina will visit Nicosia, Stephanie will visit Athens, and Dave will not visit Athens. If we want to confirm the rule *if at least one of the two friends visits Nicosia, then at most one will visit Athens*, whose travel plans do we **need** to be aware of?

- ☐ Rebecca
- ☐ Erik
- ☐ Jimmy
- ☐ Dave
- ☐ None of the above

25. Three pairs of friends (Rebecca, Tina), (Stephanie, Erik), and (Jimmy, Dave) are planning their vacation. We know that Rebecca will visit Chania, Erik will visit Limassol, and Jimmy will visit Athens. If we want to confirm the rule *at most one of the two friends will visit Chania only if at least one of them visits Limassol*, whose travel plans do we **need** to be aware of?

- ☐ Tina
- ☐ Stephanie
- ☐ Dave
- ☐ None of the above

26. Three pairs of friends (Oliver, Kristin), (Katie, Beth), and (Mark, Antony) are planning their vacation. Oliver will visit Rio de Janeiro, and Katie will visit Vienna. If we want to confirm the rule *one friend will visit Vienna only if that is absolutely essential in order for the other friend to visit San Diego*, whose travel plans do we **need** to be aware of?

- ☐ Kristin
- ☐ Beth
- ☐ Mark
- ☐ Antony
- ☐ None of the above

27. Three pairs of friends (Oliver, Kristin), (Katie, Beth), and (Mark, Antony) are planning their vacation. We know that Kristin will visit Vienna, Beth will visit San Diego, and Antony will visit Rio de Janeiro. If we want to confirm the rule *at least one of the two friends will visit Vienna if and only if at most one will visit Rio de Janeiro*, whose travel plans do we **need** to be aware of?

- ☐ Oliver
- ☐ Katie
- ☐ Mark
- ☐ None of the above

28. Three pairs of friends (Oliver, Kristin), (Katie, Beth), and (Mark, Antony) are planning their vacation. We know that Oliver will visit San Diego, Katie will visit Vienna, and Mark will visit Rio de Janeiro. If we want to confirm the rule *at most one of the two friends will visit San Diego if and only if at most one of them visits Rio de Janeiro*, whose travel plans do we **need** to be aware of?

- ☐ Kristin
- ☐ Beth
- ☐ Antony
- ☐ None of the above

29. Three pairs of friends (Oliver, Kristin), (Katie, Beth), and (Mark, Antony) are planning their vacation. We know that Kristin will visit San Diego for a week, Katie will visit Vienna for less than a week, and Antony will visit Rio de Janeiro. If we want to confirm the rule *if one friend visits San Diego for less than a week, then the other friend will visit Vienna for a week*, whose travel plans do we **need** to be aware of?

- ☐ Oliver
- ☐ Beth
- ☐ Mark
- ☐ None of the above

30. Three pairs of friends (Oliver, Kristin), (Katie, Beth), and (Mark, Antony) are planning their vacation. We know that Oliver will visit San Diego for a week, Beth will visit Vienna for a week, and Mark will visit Vienna for less than a week. If we want to confirm the rule *if at least one of the two friends visits Vienna for a week, then at most one of them will visit San Diego for a week*, whose travel plans do we **need** to be aware of?

- ☐ Kristin
- ☐ Katie
- ☐ Antony
- ☐ None of the above

Submit Answers

Clear Answers

Quiz 11: Who stole it? A Puzzle by Raymond Smullyan

1. If we know that Hare and Dormouse were not both speaking the truth and that the jam was stolen by only one person, who stole the jam?

Hint: Symbolize the above statements, construct their truth table, and try to rule out the rows/truth assignments that are inconsistent with the known facts presented above.



- ☐ Hatter
- ☐ Hare
- ☐ Dormouse
- ☐ None of the above

2. Hare: *Hatter stole the flour.*

If we know that only one of the three (Hare, Hatter, Dormouse) stole the flour and that the person who stole it is the only one who tells the truth, who stole the flour?

Hint: Take $p = \text{Hare stole the flour}$ and $q = \text{Hatter stole the flour}$, construct their truth table, and rule out the rows that are inconsistent with the known facts presented here.

- ☐ Hare
- ☐ Hatter
- ☐ Dormouse

3. Dutchess's Cook: *I know who stole the pepper.*

If we know that people who steal pepper always lie, is the cook 'guilty' or 'innocent'?

Hint: $p = \text{The Dutchess's cook stole the pepper}$, and $q = \text{The Dutchess's cook knows who stole the pepper}$

4. Hare: *Hatter is innocent.*

Hatter: *Dormouse is innocent.*

If we know that people who steal pepper always lie, innocent people never lie, and that only one person stole the pepper, who stole the pepper?

- ☐ Hare
- ☐ Hatter
- ☐ Dormouse
- ☐ None of the above

5. Gryphon: *Mock Turtle is innocent.*

Mock Turtle: *Lobster is guilty.*

If we know that people who steal pepper always lie, innocent people never lie, and only one person is guilty, who stole the pepper?

- ☐ Gryphon
- ☐ Mock Turtle
- ☐ Lobster
- ☐ None of the above

6. Dutchess: *The cook did not steal the sugar.*

Dutchess's Cook: *The Dutchess stole the sugar.*

If we know that the person who is guilty is lying and that only one person is guilty, who stole the sugar?

- ☐ Dutchess
- ☐ Dutchess's Cook
- ☐ None of the above

7. In the previous case, was the innocent person 'lying' or 'telling the truth'?

8. Caterpillar: *Bill the Lizard stole the salt.*

Bill the Lizard: *Caterpillar's statement is true.*

Cheshire Cat: *I never stole the salt.*

If we know that the culprit is either the Caterpillar, the Cat, or Bill the Lizard (only one of them), and that at least one of them lies and at least one of them tells the truth, who stole the salt?

- ☐ Caterpillar
- ☐ Bill the Lizard
- ☐ Cheshire Cat

9. Frog-Footman: *The baking pan was stolen by the Fish-Footman.*

Fish-Footman: *I never stole the baking pan.*

Knave of Hearts: *I stole the baking pan.*

If we know that only one person is guilty and that at most one of them lies, who stole the baking pan?

- ☐ Frog-Footman
- ☐ Fish-Footman
- ☐ Knave of Hearts
- ☐ None of the above

10. Dutchess: *The Cheshire Cat stole the cookbook.*

Cheshire Cat: *I stole the cookbook.*

Dutchess's Cook: *I didn't steal the cookbook.*

If we know that the thief lies, at least one of them tells the truth, and the culprit is either the Dutchess, the Cat, or the Cook (only one of them), who stole the cookbook?

☐ Dutchess

☐ Cheshire Cat

☐ Dutchess's Cook

11. Dutchess: *The Cheshire Cat stole the cookbook.*

Cheshire Cat: *I stole the cookbook.*

Dutchess's Cook: *I didn't steal the cookbook.*

If we know that the thief lies, the other two either both lie or both tell the truth, and only one person is guilty, who stole the cookbook?

☐ Dutchess

☐ Cheshire Cat

☐ Dutchess's Cook

☐ None of the above

12. March Hare: *Hatter stole the butter.*

Hatter: *Dormouse stole the eggs.*

Dormouse: *I stole the milk.*

If we know that the person who stole the butter tells the truth and the person who stole the eggs lies, who stole what?

Hint: $p = \text{Hatter stole the butter}$, $q = \text{Dormouse stole the eggs}$, and $r = \text{Dormouse stole the milk}$

Butter	Eggs	Milk

March Hare

Dormouse

Hatter

Submit Answers

Clear Answers

Quiz 14: Tiger or Treasure? A Puzzle by Raymond Smullyan

1. WHERE IS THE TREASURE?



Room I	Room II
Treasure	Tiger

2. Room I: *At least one of these rooms contains a treasure.*

Room II: *A tiger is in the other room.*

If the signs are either both true or both false, where is the treasure and where is the tiger?

Room I	Room II
Treasure	Tiger

3. Room I: *Both rooms contain a treasure.*

Room II: *Both rooms contain a treasure.*

If there is a treasure in room I, the sign on the door is true; otherwise, it's false. And, if there is a tiger in room II, the sign on the door is true; otherwise, it's false. Where is the treasure and where is the tiger?

Room I	Room II
Tiger	Treasure

4. Room I: *At least one room contains a treasure.*

Room II: *The other room contains a treasure.*

If the preceding rule applies here, where is the treasure and where is the tiger?

Room I	Room II

Tiger	Treasure
-------	----------

5. Room I: *It makes no difference which room you pick.*

Room II: *There is a treasure in the other room.*

If the preceding rule applies here, where is the treasure and where is the tiger?

Room I	Room II

Tiger	Treasure
-------	----------

6. Room I: *It does make a difference which room you pick.*

Room II: *You are better off choosing the other room.*

If the preceding rule applies here, where is the treasure and where is the tiger?

Room I	Room II

Tiger	Treasure
-------	----------

7. *This room contains a tiger.*

Both rooms contain a tiger.

If we don't know which sign goes on which door, and the preceding rule applies here, where is the treasure and where is the tiger?

Hint: Which door (I or II) does the sign *this room contains a tiger* fit?

Room I	Room II

Treasure	Tiger
----------	-------

8. Room I: *A tiger is in this room.*

Room II: *A treasure is in this room.*

Room III: *A tiger is in room II.*

One room contains a treasure and the other two contain tigers. If at most one of the above signs is true, where is the treasure and where are the tigers?

Room I	Room II	Room III

Tiger	Treasure	Tiger
-------	----------	-------

9. Room I: *A tiger is in room II.*

Room II: *A tiger is in this room.*

Room III: *A tiger is in room I.*

One room contains a treasure and the other two contain tigers. If the sign on the room containing the treasure is true and at least one of the other signs is false, where is the treasure and where are the tigers?

Room I	Room II	Room III
<input type="text"/>	<input type="text"/>	<input type="text"/>
Tiger	Treasure	Tiger

10. Room I: *Room III is empty.*

Room II: *The tiger is in room I.*

Room III: *This room is empty.*

One room contains a treasure, one room contains a tiger, and one room is empty. The sign on the room containing the treasure is true, the sign on the room containing the tiger is false, and the sign on the empty room could be either true or false. Which room is empty, which room contains the treasure, and which room contains the tiger?

Room I	Room II	Room III
<input type="text"/>	<input type="text"/>	<input type="text"/>
Treasure	Tiger	Empty

Submit Answers

Clear Answers

Quiz 15: The Isle of Dreams: A Puzzle by Raymond Smullyan

1. Each inhabitant of the Isle of Dreams is of one of two types: diurnal and nocturnal. The diurnal inhabitants have true beliefs when they are awake and false beliefs when they are asleep. The nocturnal inhabitants have true beliefs when they are asleep and false beliefs when they are awake. Which of the following fact(s) must be true about the inhabitant below?



- ☐ The inhabitant is diurnal
- ☐ The inhabitant is nocturnal
- ☐ The inhabitant is awake
- ☐ The inhabitant is asleep

2. If one of the inhabitants believed that he was asleep, which of the following fact(s) must be true?

- ☐ The inhabitant is diurnal
- ☐ The inhabitant is nocturnal
- ☐ The inhabitant is awake
- ☐ The inhabitant is asleep

3. An inhabitant's belief that she is diurnal or nocturnal never changes.

- ☐ True
- ☐ False

4. An inhabitant's belief that she is awake or asleep never changes.

- ☐ True
- ☐ False

5. If one of the inhabitants believed that she was either asleep or nocturnal, which of the following fact(s) must be true?

- ☐ The inhabitant is diurnal
- ☐ The inhabitant is nocturnal
- ☐ The inhabitant is awake
- ☐ The inhabitant is asleep

6. If one of the inhabitants believed that he was both diurnal and asleep, which of the following fact(s) must be true?

- ☐ The inhabitant is diurnal
- ☐ The inhabitant is nocturnal
- ☐ The inhabitant is awake
- ☐ The inhabitant is asleep

7. Mr. Kulp: *Me and my wife are both nocturnal.*

Mrs. Kulp: *Me and my husband are not both nocturnal.*

If one of them was awake and the other one was asleep, which of the following fact(s) must be true?

- ☐ Mr. Kulp is diurnal
- ☐ Mr. Kulp is nocturnal
- ☐ Mr. Kulp is awake
- ☐ Mr. Kulp is asleep
- ☐ Mrs. Kulp is diurnal
- ☐ Mrs. Kulp is nocturnal
- ☐ Mrs. Kulp is awake
- ☐ Mrs. Kulp is asleep

8. Mrs. Byron: *Me and my husband are either both asleep or both awake.*

Mr. Byron: *Me and my wife are neither both asleep nor both awake.*

If one of them was diurnal and the other one was nocturnal, who was right?

- ☐ Mrs. Byron
- ☐ Mr. Byron
- ☐ We can't determine who was right

9. Edward: *Me and my sister are both nocturnal.*

Edward: *I am not nocturnal.*

Which of the following fact(s) must be true?

- ☐ Edward is diurnal
- ☐ Edward is nocturnal
- ☐ Edward is awake
- ☐ Edward is asleep
- ☐ Edward's sister is diurnal
- ☐ Edward's sister is nocturnal

10. The Isle of Dreams has a king, a queen, and a princess.

Princess: *My parents are of different types.*

Princess: *My father is diurnal and my mother is nocturnal.*

If the princess made each of the above statements in a different state of mind (first awake and then asleep or vice versa), which of the following fact(s) must be true?

- ☐ The king is diurnal
- ☐ The king is nocturnal
- ☐ The queen is diurnal
- ☐ The queen is nocturnal

Submit Answers

Clear Answers

Quiz 19: How to Be a Philosopher

1. How to be a philosopher:

1. In order to become a philosopher, it is essential that one can reason well or has a solid background in formal logic.
2. Philosophers are rational and highly reflective.
3. With respect to the question of God, philosophers are either agnostic or atheistic.
4. To be a philosopher, it suffices that one loves wisdom.

Assuming that the above statements are true, what can we infer about the individuals below?



Stephanie

Solid background
in formal logic

No love for
wisdom



Camila

Rational

Highly reflective



Zach

Loves wisdom

Reasons well



Elizabeth

Solid background
in formal logic

Strong faith
in God

Might be a philosopher

Could not be a
philosopher

Must be a philosopher

Elizabeth

Stephanie

Camila

Zach

2. How to be a philosopher:

1. If one is good at formal logic, one can develop strong arguments.
2. Unless one is good at formal logic, one cannot hold consistent views.
3. One is a philosopher only if one holds consistent views.
4. If one can develop strong arguments, one is a philosopher.

Assuming that the above statements are true, what can we infer about the individuals below?



Stephanie
Good at
formal logic
Strong faith
in God



Camila
Rational
Agnostic



Zach
Poor at
formal logic
Atheist



Elizabeth
Holds consistent
views
No views on
religion

Might be a philosopher

Could not be a
philosopher

Must be a philosopher

Zach

Camila

Stephanie

Elizabeth

3. How to be a philosopher:

1. If one is good at formal logic, one is a philosopher but only if they have no trouble reading long texts.
2. Loving wisdom is necessary for being a philosopher.
3. Unless one is good at formal logic and capable of producing compelling arguments, one cannot become a philosopher.
4. One is a philosopher provided that one holds consistent views or challenges common wisdom.

Assuming that the above statements are true, what can we infer about the individuals below?



Stephanie
Good at formal logic
No trouble reading long texts



Camila
Holds consistent views
Never challenges common wisdom



Zach
Loves wisdom
Poor at formal logic



Elizabeth
Great at formal logic
Unable to read long texts

Might be a philosopher

Could not be a philosopher

Must be a philosopher

Elizabeth

Camila





Stephanie

Zach

4. How to be a philosopher:

1. Either Stephanie or Elizabeth is a philosopher.
2. Philosophers hold consistent views.
3. Philosophers never make uninformative statements.

Assuming that the above statements are true, what can we infer about the individuals below?

Stephanie	Camila	Zach	Elizabeth
			
<p>Might be a philosopher</p> <input type="text"/>	<p>Could not be a philosopher</p> <input type="text"/>	<p>Must be a philosopher</p> <input type="text"/>	
<input type="button" value="Zach"/>	<input type="button" value="Elizabeth"/>	<input type="button" value="Stephanie"/>	<input type="button" value="Camila"/>
<input type="button" value="Submit Answers"/>		<input type="button" value="Clear Answers"/>	

1.



The Facts

- Knights always tell the truth
- Everyone is a knight
- Next to the killer is where the detective is

The Statements

Anne	Egon	Paul	Debra
			
<i>"I'm neither the witness nor the killer"</i>	<i>"I'm neither the detective nor the killer"</i>	<i>"I'm neither the witness nor the killer"</i>	<i>"I'm neither the detective nor the accomplice"</i>





The killer	The accomplice	The witness	The detective
Debra	Anne	Egon	Paul



The Facts

- Anne is telling the truth in both rounds
- Paul is lying in at least one round

The Statements

Anne	Egon	Paul	Debra
			
<p>FIRST ROUND: "I'm not the killer"</p> <p>SECOND ROUND: "Egon is lying in both rounds"</p>	<p>FIRST ROUND: "I'm not the killer"</p> <p>SECOND ROUND: "If I'm the killer, Debra is telling the truth in both rounds"</p>	<p>FIRST ROUND: "I'm the accomplice only if Anne is the killer"</p> <p>SECOND ROUND: "If Debra is the killer, I'm the detective"</p>	<p>FIRST ROUND: "I'm not the killer"</p> <p>SECOND ROUND: "Neither Anne nor Paul is the witness"</p>

The killer	The accomplice	The witness	The detective
Debra	Paul	Egon	Anne





3.



The Facts

- There are three groups of people: knights tell the truth in both rounds; knaves lie in both rounds; politicians tell the truth only in one round
- The killer is a politician
- The detective has dark hair
- The witness is a knight
- The accomplice never wears glasses

The Statements

Anne	Egon	Paul	Debra
			
FIRST ROUND: "If Debra is a knight, she is the killer"	FIRST ROUND: "Anne is a knight"	FIRST ROUND: "Either Egon or Debra is the detective"	FIRST ROUND: "If I have blonde hair, then I must be the killer"
SECOND ROUND: "Debra is a knave"	SECOND ROUND: "Anne is a knave if and only if Paul is a knight"	SECOND ROUND: "Neither Egon nor Debra is the detective"	SECOND ROUND: "I'm the killer only if the detective has dark hair"

The killer	The accomplice	The witness	The detective
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Anne	Egon	Paul	Debra
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Submit Answers	Clear Answers
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