

Name _____

Date _____

If you turn this in on time: do the odds.

LESSON
2.3

Practice A

For use with pages 86–93

If you turn this in late or

you are doing it over: do the evens.

Use the Law of Detachment to make a valid conclusion in the situation.

1. If you get a hit, then your baseball team will win. You hit a home run.
2. If Rylee gets promoted, then Callie will also be promoted. Rylee is promoted.
3. Any time Kendra runs in a cross country race, if she runs a strong race, then she wins. In the cross country race last Saturday, Kendra ran her best race.
4. If two integers are added together, then the result is an integer. You add an integer x to another integer y .
5. If you double a negative number, then the result is a smaller number. You calculate $2x$, where $x < 0$.
6. If an integer is divided by one of its factors, then the result is another one of the integer's factors. You divide an even integer x by 2.

Teacher
Score:

Use the Law of Syllogism to write the statement that follows from the pair of statements that are given.

7. If Moose is hungry when he goes to the pizza shop, then he'll finish a whole pizza. If Moose eats a whole pizza, then he goes through a pitcher of soda.
8. If you mail the payment by noon, then it will arrive by tomorrow. If your payment arrives by tomorrow, then you won't be charged a late fee.
9. If Estelle takes her broker's advice, she'll invest in stock X. If Estelle invests in stock X, she'll earn 50% on her investment by next year.
10. If a triangle has two angles of 60° , then the triangle is equiangular. If a triangle is equiangular, then it is also equilateral.

Decide whether the conclusion reached from the two statements demonstrates the *Law of Detachment*, the *Law of Syllogism*, or *neither*.

11. If Cedric plays in a big game, then he gets nervous. If Cedric gets nervous, then he performs well.
Conclusion: If Cedric plays in a big game, then he performs well.
12. If Leanne spends more than \$30 on her car, then she'll have to wait until next week to buy Michael's birthday gift. Leanne spent \$40 on her car.
Conclusion: Leanne will have to wait until next week to buy Michael's birthday gift.
13. If Lavonne gets money, she gives half of it to Sid. If Sid gets money, he gives half of it to Lavonne.
Conclusion: Lavonne and Sid share their money equally.

Student
score:
How well
do you feel
you understand
this learning
target:

A
B
C
D
E
F

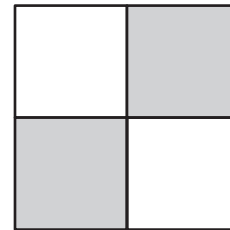
LESSON
2.3**Practice A** *continued*
For use with pages 86–93

Decide whether *inductive* or *deductive* reasoning is used to reach the conclusion. Explain your reasoning.

14. While shopping for a product, you notice that brand A is more expensive than brand B. You conclude that brand A is of higher quality than brand B.
15. Because the brand A product costs \$1.50 and the brand B product costs \$1.00, you conclude that the brand A product is 50% more expensive.
16. It normally takes you 20 minutes to walk home from school. By walking faster one day, you make it in 15 minutes. The following day, you make it in 12 minutes. You conclude that you could make the trip in as little as 10 minutes.
17. On the first meet of the year, JD, Bob, and Raul finish their race in a tie. In the final meet of the year, Raul finishes well ahead of Bob and JD. Having seen both races, you conclude that Raul trained the hardest.

In Exercises 18 and 19, use the figure at the right.

18. Based on what you see in the figure, use inductive reasoning to make a conjecture about how the area of one square compares to the area of another square with sides that are twice as long.
19. Use deductive reasoning to prove your conjecture by using side lengths of $s = x$ and $s = 2x$ in the formula for the area of a square and comparing the result.



Use the figure showing three standing dominos, A, B, and C.

20. Is the *Law of Detachment* or the *Law of Syllogism* used to reach the conclusion below?
 Statements: If A is pushed into B, then B will be knocked into C. A is pushed into B.
 Conclusion: B is knocked toward C.
21. Write a set of statements and a conclusion that demonstrate the Law of Syllogism.
22. Suppose domino D is placed behind domino C. Write a set of statements and a conclusion that demonstrate the Law of Syllogism being used to connect more than two conditional statements.

