## LESSON 2.3 Practice B
*For use with pages 86–93*

**Determine if statement (3) follows from statements (1) and (2) by either the Law of Detachment or the Law of Syllogism. If it does, state which law was used. If it does not, write invalid.**

1. (1) If an angle measures more than 90°, then it is not acute.

   (2) $m\angle ABC = 120°$

   (3) $\angle ABC$ is not acute.

2. (1) All 45° angles are congruent.

   (2) $\angle A \cong \angle B$

   (3) $\angle A$ and $\angle B$ are 45° angles.

3. (1) If you order the apple pie, then it will be served with ice cream.

   (2) Matthew ordered the apple pie.

   (3) Matthew was served ice cream.

4. (1) If you wear the school colors, then you have school spirit.

   (2) If you have school spirit, then the team feels great.

   (3) If you wear the school colors, then the team will feel great.

5. (1) If you eat too much turkey, then you will get sick.

   (2) Kinsley got sick.

   (3) Kinsley ate too much turkey.

6. (1) If $\angle 2$ is acute, then $\angle 3$ is obtuse.

   (2) If $\angle 3$ is obtuse, then $\angle 4$ is acute.

   (3) If $\angle 2$ is acute, then $\angle 4$ is acute.

**In Exercises 7–10, decide whether *inductive* or *deductive* reasoning is used to reach the conclusion. *Explain* your reasoning.**

7. Angela knows that Walt is taller than Peter. She also knows that Peter is taller than Natalie. Angela reasons that Walt is taller than Natalie.

8. Josh knows that Brand X computers cost less than Brand Y computers. All other brands that Josh knows of cost less than Brand X. Josh reasons that Brand Y costs more than all other brands.

9. For the past three Wednesdays, the cafeteria has served macaroni and cheese for lunch. Dana concludes that the cafeteria will serve macaroni and cheese for lunch this Wednesday.

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**LESSON 2.3** **Practice B** *continued*
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**10.** If you live in Nevada and are between the ages of 16 and 18, then you must take driver's education to get your license. Anthony lives in Nevada, is 16 years old, and has his driver's license. Therefore, Anthony took driver's education.

**In Exercises 11 and 12, state whether the argument is valid. *Explain* your reasoning.**

**11.** Jeff knows that if he does not do his chores in the morning, he will not be allowed to play video games later the same day. Jeff does not play video games on Saturday afternoon. So Jeff did not do his chores on Saturday morning.

**12.** Katie knows that all sophomores take driver education in her school. Brandon takes driver education. So Brandon is a sophomore.

**In Exercises 13–16, use the true statements below to determine whether you know the conclusion is *true* or *false*. *Explain* your reasoning.**

If Dan goes shopping, then he will buy a pretzel.

If the mall is open, then Jodi and Dan will go shopping.

If Jodi goes shopping, then she will buy a pizza.

The mall is open.

**13.** Dan bought a pizza.

**14.** Jodi and Dan went shopping.

**15.** Jodi bought a pizza.

**16.** Jodi had some of Dan's pretzel.

**17.** **Robotics** Because robots can withstand higher temperatures than humans, a fire-fighting robot is under development. Write the following statements about the robot in order. Then use the Law of Syllogism to complete the statement, "If there is a fire, then __?__."
   **A.** If the robot sets off the fire alarm, then it concludes there is a fire.
   **B.** If the robot senses high levels of smoke and heat, then it sets off a fire alarm.
   **C.** If the robot locates the fire, then the robot extinguishes the fire.
   **D.** If there is a fire, then the robot senses high levels of smoke and heat.
   **E.** If the robot concludes there is a fire, then it locates the fire.

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