NAME _____ DATE _____

Practice A

For use with pages 87–95

Using *p* and *q* below, write the symbolic statement in words.

    p: The sky is cloudy.   *q*: It is raining.

1. $\sim p$ **2.** $\sim q$ **3.** $q \rightarrow p$

4. $\sim q \rightarrow \sim p$ **5.** $p \rightarrow q$ **6.** $\sim p \rightarrow \sim q$

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

  7. (1) If an angle is acute, then it is not obtuse.

      (2) $\angle ABC$ is acute.

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

  8. (1) Right angles are congruent.

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

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

  9. (1) If you save a penny, then you have earned a penny.

      (2) Art saves a penny.

      (3) Art has earned a penny.

10. (1) If you are a teenager, then you are always right.

      (2) If you are always right, then people will listen to you.

      (3) If you are a teenager, then people will listen to you.

11. (1) If you drive 50 miles per hour in a school zone, then you will get a speeding ticket.

      (2) Pat received a speeding ticket.

      (3) Pat was driving 50 miles per hour in a school zone.

12. (1) If $m\angle 2 = 40°$, then $m\angle 3 = 140°$.

      (2) If $m\angle 3 = 140°$, then $m\angle 4 = 40°$.

      (3) If $m\angle 2 = 40°$, then $m\angle 4 = 40°$.

Write a conclusion using the true statements. If no conclusion is possible, write no conclusion.

13. If Tim gets stung by a bee, then he will get very ill.
If he gets very ill, then he will go to the hospital. Tim gets stung by a bee.

14. If Hank applies for the job, then he will be the new lifeguard at the pool.
If he is the new lifeguard at the pool, then he will buy a new car. Hank
applies for the job.

15. If two planes intersect, then their intersection is a line. Plane *A* and plane *B*
intersect.

16. If you cut class, then you will receive a detention. You cut class.

17. If Jay doesn't work hard, then he won't start the game and will quit the team.
Jay quit the team.

18. If *B* is between *A* and *C*, then $AB + BC = AC$. $AB = 3$cm, $BC = 2$ cm.