Name _____ Class _____ Date _____

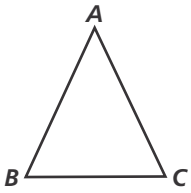
Practice 5-4

Inverses, Contrapositives, and Indirect Reasoning

Identify the two statements that contradict each other.

1. I. $ABCD$ is a trapezoid.
II. $\overline{AB} \parallel \overline{CD}$
III. $\overline{BC} \parallel \overline{AD}$

2. I. $\overline{AB} \cong \overline{BC}$
II. $m\angle A + m\angle B = 80$
III. $\triangle ABC$ is isosceles.



Write the negation of each statement.

3. The angle measure is 65.

4. Tina has her driver's license.

5. The figure has eight sides.

6. The restaurant is not open on Sunday.

7. $\triangle ABC$ is not congruent to $\triangle XYZ$.

8. $m\angle Y > 50$

Write (a) the inverse and (b) the contrapositive of each statement. Give the truth value of each.

9. If two triangles are congruent, then their corresponding angles are congruent.

10. If you live in Toronto, then you live in Canada.

Write the first step of an indirect proof.

11. $m\angle A = m\angle B$

12. $TUVW$ is a trapezoid.

13. $\overline{LM}$ intersects $\overline{NO}$.

14. $\triangle FGH$ is equilateral.

15. It is sunny outside.

16. $\angle D$ is not obtuse.

17. Write an indirect proof that $m\angle A < 90$.