Warm Up 10

1. Inductive
2. conjecture
3. $x = -\frac{3}{2}$

Lesson Practice 10

a. Hypothesis: $x = 4$ and $y = 2$; Conclusion: $2x + 3y = 14$

b. Hypothesis: an apple is a golden delicious apple; Conclusion: the apple is yellow in color.

c. true

d. If $x = 3$ or -3, then $x^2 = 9$; true.

e If it is Thursday, then it is Thanksgiving Day; false.

f. If a cardinal is bright red, then it is a male; true.

Practice 10

1. 13 miles; Segment Addition Postulate

2. 45 in.

3. yes; By definition, parallel lines are coplanar.

4. If a number is an integer, then it is a rational number.

5. $(x - 7)(x + 3)$

6. The statement is always nonnegative for all real numbers x, because the numerator is always nonnegative, and the denominator is positive.

7. **B**

8. The Ruler Postulate refers to measures of distance whereas the Protractor Postulate refers to angle measures.

9. no; A statement's converse can be false even if the statement itself is true; See student work.

10. yes; If an animal's expected life span is approximately 70 years, then it is a loggerhead sea turtle.

11. 0.26%

12. $m = \frac{E}{c^2}$

13. It is impossible to draw a second line because of the Parallel Postulate.

14. 6.32

15. $k = 8$ or $k = -6$; There are two solutions because the segment can extend in either of two directions.

16. It is not possible because the lines are straight. They intersect at the same angle on both sides of the line. Therefore, the vertical angles will be equal.

17. vertical angles

18. Yes, as long as they are measuring the same amount, but you must convert one into the unit of the other.

19. Sample: expressing distances between planets

20. Reflexive Property of Equality

21. $30\ \text{ft}^2$

22. 243

23. 9×10^{16}

24. $x = 3$

25. There could be one obtuse angle and two acute angles whose measures would sum to 180°. The student could say, "If the measures of three angles sum to 90°, then the angles are all acute."

26. The student incorrectly added the center term. The answer should be $x^2 - x - 6$.

27. rational numbers and real numbers

28. 5; 13; The answers are different because in the first, the absolute value of the numbers' sum is found, but in the second, the absolute value of each number is found before adding.

29. C

30.