Math 1312
Homework 3

Enter your answers in the EMCF titled "Homework 3" at casa.uh.edu before the due date/time. If a problem comes from the exercises in the textbook then Problem 1.2.6 refers to Chapter 1, Section 2, problem number 6 etc.

1. Problem 1.5.6
   - A. Subtraction Property of Equality
   - B. Addition property of Equality
   - C. Multiplication Property of Equality
   - D. Distributive Property
   - E. Substitution Property

2. Problem 1.5.8
   - A. Definition of a Supplementary Angle
   - B. Measure of a straight angle equals $180°$
   - C. Angle-Addition Postulate
   - D. Substitution Property
   - E. Transitive Property

3. Problem 1.5.28 Reason 5
   - A. Addition Property of Equality
   - B. Transitive Property
   - C. Substitution Property
   - D. Segment-Addition Postulate
   - E. Division Property of Equality

4. Problem 1.5.36
   - A. $3 > -1$
   - B. $-3 > 1$
   - C. $-3 < 1$
   - D. $3 > 1$
   - E. None of the above

5. Problem 1.5.38 Write the last statement of the proof.
   - A. $a = b$ and $c = d$
   - B. $a - c = b - d$
   - C. Proof
   - D. Transitive
   - E. $c = d$

6. Consider a relation from Problem 1.6.14. Which is a property of this relation?
    A. Reflexive
    B. Symmetric
    C. Transitive
    D. All of the above
    E. None of the above

7. Consider a relation "is congruent" for angles. Which is a property of this relation?
    A. Reflexive
    B. Symmetric
    C. Transitive
    D. All of the above
    E. None of the above

8. Consider a relation "is supplementary" for angles. Which is a property of this relation?
    A. Reflexive
    B. Symmetric
    C. Transitive
    D. All of the above
    E. None of the above

9. Given that $2(x - 4) - 9 = 17$, you can prove that:
    A. $x = 0$
    B. $x = 2$
    C. $x = 15$
    D. $x = 16$
    E. None of the above

10. The perpendicular bisector of a line is unique.
    A. True
    B. False

11. For two intersecting lines, ∠1 and ∠2 are a pair of vertical angles formed. Given that $m\angle 1 = \frac{x}{3} + 7$ and $m\angle 2 = \frac{x}{2} - 5$, find the value of x.
    A. 12
    B. 24
    C. 36
    D. 72
    E. None of the above

12. If ∠1 and ∠2 are complementary and ∠1 ≅ ∠2, then ∠1 must be a(n):
    A. Obtuse angle
    B. Straight angle
    C. Acute angle
    D. Right angle
    E. None of the above

13. If ∠1 and ∠2 are supplementary and ∠1 is an acute angle, then ∠2 must be a(n):
   A. Obtuse angle
   B. Straight angle
   C. Vertical angle
   D. Right angle
   E. None of the above

14. ∠1 and ∠2 are vertical. ∠1 is complementary to ∠3. How ∠2 and ∠3 are related?
   A. Congruent
   B. Complementary
   C. Supplementary
   D. Vertical
   E. None of the above

15. If two angles are congruent, then they are right angles.
   A. Always true
   B. Sometimes true
   C. Never true