Chapter 2 Proof Reasoning List
All converse statements would also be true.

1. Reflexive Property (= or ≅)   a = a
2. Substitution (POE ONLY)   If a = b and a + 2 = c, then b + 2 = c.
3. Transitive Property (= or ≅)   If a = b and b = c, then a = c.
4. Symmetric Property (= or ≅)   If a = b, then b = a.
5. Add./Subtraction POE   If AB + CD = PQ + CD, then AB = PQ.
6. Seg. Add. Post.   If 2 small seg., then they add up to the big seg.
7. Angle Add. Post.   If 2 ∠s, then they add to be the big ∠.
8. ⊥ Lines/Seg./Rays   If lines. R perp., then angles are (right) 90°.
9. Def of Right angles   If ∠s are right, then they are 90° (≅).
10. Def of Vertical Angles   If ∠s are vertical, then they are ≅.
11. Supp. Angles   If 2 ∠s are supp., then they add to 180°.
12. Comp. Angles   If 2 ∠s are comp., then they add to 90°.
13. Def of Linear Pair   If two ∠s form a linear pair, then supp. (180°).
14. Equal and Congruent   If = then ≅.
15. Def. of Midpoint   If midpoint, then seg is split into 2 ≅ seg.
16. Def of ∠ Bisector   If ∠ is bisected, then ∠s are ≅.
17. Def of Seg. Bisector   If bisected seg., then seg. Is split into 2 ≅ seg.
18. Distribution POE   If 2(x + 7), then 2x + 14.
19. Multiplication/Division POE   If $\frac{1}{4}x = 10$, then x = 40.
20. Communitive POE   If m∠2 +m∠1=180°, then m∠1 +m∠2=180°.
21. Associative POE   If 2(3) = 6, then 3(2) = 6.

Chapter 3 Parallel Lines Proof Reasoning List
All converse statements are also true.

22. AIA's R ≅   If lines are //, then AIA R ≅.
23. AEA's R ≅   If lines are //, then AEA R ≅.
24. Corresponding ∠s R ≅   If lines are //, then corresponding ∠s R ≅.
25. SSIA R ≅   If lines are //, then SSIA R ≅.
26. SSEA R ≅   If lines are //, then SSEA R ≅.
27. Perp. Transversal Thm   If line perp. to 1 or 2 // lines, then perp to other.
28. Transitive Property of // Lines   If 2 ↔ s R // to the same ↔, then // 2 each other
29. Linear Pair Perpendicular Thm   If 2 ↔ s intersect to form a linear pair of ≅∠,
                                          then ↔ s R perp.
30. ↔ s Perp. to a Transversal Thm   If 2 ↔ s are perp. to the same lines, then they
                                          are // to each other.
31. Comp. ≅ ∠s   If 2 ∠s are comp. to the same , then ∠s R ≅.
32. Supp. ≅ ∠s   If 2 ∠s are supp. to the same , then ∠s R ≅.