

# Answer Key

## Test B

1. Inverse: If it is not snowing, then the temperature is not below  $32^{\circ}\text{F}$ . Converse: If the temperature is below  $32^{\circ}\text{F}$ , then it is snowing.

Contrapositive: If the temperature is not below  $32^{\circ}\text{F}$ , then it is not snowing.

2. Inverse: If I do not ride on the Ferris wheel, then I am afraid of heights. Converse: If I am not afraid of heights, then I will ride on the Ferris wheel. Contrapositive: If I am afraid of heights, then I do not ride on the Ferris wheel.

3. Inverse: If two lines are not parallel, then the two lines are not in the same plane. Converse: If two lines are in the same plane, then the two lines are parallel. Contrapositive: If two lines are not in the same plane, then the two lines are not parallel.

4. Inverse: If a point is not on segment  $AB$ , then it is not on ray  $AB$ . Converse: If a point is on ray  $AB$ , then it is on segment  $AB$ . Contrapositive: If a point is not on ray  $AB$ , then it is not on segment  $AB$ .

5. true 6. true

7. If points  $X$ ,  $Y$ , and  $Z$  are not collinear, then points  $X$ ,  $Y$ , and  $Z$  are coplanar.

8. Points  $X$ ,  $Y$ , and  $Z$  are not coplanar.

9. Points  $X$ ,  $Y$ , and  $Z$  are collinear.

10. If points  $X$ ,  $Y$ , and  $Z$  are coplanar, then points  $X$ ,  $Y$ , and  $Z$  are not collinear.

11. If points  $X$ ,  $Y$ , and  $Z$  are collinear, then points  $X$ ,  $Y$ , and  $Z$  are not coplanar.

12. If points  $X$ ,  $Y$ , and  $Z$  are not coplanar, then points  $X$ ,  $Y$ , and  $Z$  are collinear.

13. Multiplication property of equality

14. Reflexive property of equality

15. Substitution property of equality

16. Subtraction property of equality

17. Transitive property of equality

18. 3 19. 14

20. Statements	Reasons
1. $AB = BC$	1. Given
2. $AC = AB + BC$	2. Segment Addition Postulate
3. $AC = BC + BC$	3. Substitution property of equality
4. $AC = 2BC$	4. Distributive property
5. $\frac{1}{2}AC = BC$	5. Multiplication prop. of equality

21. Statements	Reasons
1. $\angle 1$ and $\angle 3$ are a linear pair. $\angle 2$ and $\angle 3$ are a linear pair.	1. Given
2. $\angle 1$ and $\angle 3$ are supplementary. $\angle 2$ and $\angle 3$ are supplementary.	2. Linear Pair Postulate
3. $\angle 1 \cong \angle 2$	3. Congruent Suppl. Thm.
4. $m\angle 1 = m\angle 2$	4. Def. of $\cong$ angles