

Proofs

1. Given: $3(2x - 5) + 1 = 2(x - 3)$

Prove: $x = 2$

Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

2. Given: $4(x - 3) + 7 = 8(x + 3) - 1$

Prove: $x = -7$

Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.

Always, Sometimes, Never

A) Always

S) Sometimes

N) Never

Choose the letter that best describes each statement.

- ___ 1. If A, B and C are collinear and A is between B and C, then $AB + BC = AC$
- ___ 2. In a triangle, the largest angle is across from the shortest side.
- ___ 3. The three medians of a triangle intersect a point inside the triangle.
- ___ 4. An equilateral triangle is also a scalene triangle
- ___ 5. Vertical angles form a linear pair
- ___ 6. Two parallel lines are cut by a transversal. The two exterior angles on the same side of the transversal are supplementary.
- ___ 7. When two parallel lines are cut by a transversal, the same side exterior angles congruent.
- ___ 8. When two parallel lines are cut by a transversal, corresponding angles are congruent.
- ___ 9. When two parallel lines are cut by a transversal, the alternate interior angles are congruent.
- ___ 10. When two parallel lines are cut by a transversal, same side interior angles are supplementary.

Proofs

1. Given: $3(2x - 5) + 1 = 2(x - 3)$

Prove: $x = 2$

Statements	Reasons
1. $3(2x - 5) + 1 = 2(x-3)$	1. Given
2. $6x - 15 + 1 = 2x - 6$	2. Distributive Property
3. $6x - 14 = 2x - 6$	3. Simplify/Combine Like Terms
4. $4x - 14 = -6$	4. Subtraction Property of Equality
5. $4x = 8$	5. Addition Property of Equality
6. $x = 2$	6. Division Property of Equality

2. Given: $4(x - 3) + 7 = 8(x + 3) - 1$

Prove: $x = -7$

Statements	Reasons
1. $4(x - 3) + 7 = 8(x + 3) - 1$	1. Given
2. $4x - 12 + 7 = 8x + 24 - 1$	2. Distributive Property
3. $4x - 5 = 8x + 23$	3. Simplify/Combine Like Terms
4. $-4x - 5 = 23$	4. Subtraction Property of Equality
5. $-4x = 28$	5. Addition Property of Equality
6. $x = -7$	6. Division Property of Equality

Alternate way of doing

2. Given: $4(x - 3) + 7 = 8(x + 3) - 1$

Prove: $x = -7$

Statements	Reasons
1. $4(x - 3) + 7 = 8(x + 3) - 1$	1. Given
2. $4x - 12 + 7 = 8x + 24 - 1$	2. Distributive Property
3. $4x - 5 = 8x + 23$	3. Simplify
4. $-5 = 4x + 23$	4. Subtraction Property of Equality
5. $-28 = 4x$	5. Addition Property of Equality
6. $-7 = x$	6. Division Property of Equality
7. $x = -7$	7. Symmetric Property of Equality

Always, Sometimes, Never

A) Always

S) Sometimes

N) Never

Choose the letter that best describes each statement.

N___ 1. If A, B and C are collinear and A is between B and C, then $AB + BC = AC$

N___ 2. In a triangle, the largest angle is across from the shortest side.

A___ 3. The three medians of a triangle intersect a point inside the triangle.

N___ 4. An equilateral triangle is also a scalene triangle

N___ 5. Vertical angles form a linear pair

A___ 6. Two parallel lines are cut by a transversal. The two exterior angles on the same side of the transversal are supplementary.

S___ 7. When two parallel lines are cut by a transversal, the same side exterior angles congruent.

A___ 8. When two parallel lines are cut by a transversal, corresponding angles are congruent.

A___ 9. When two parallel lines are cut by a transversal, the alternate interior angles are congruent

A___ 10. When two parallel lines are cut by a transversal, same side interior angles are supplementary