

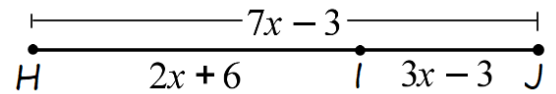
Intro to Algebraic and Geometric Proofs

Give the statement and reason for each Algebraic proof.

1.	Statements	Reasons
	$\frac{2x-10}{3} = -12$	

2.	Statements	Reasons
	$x + 6.5 = 3(x - 1.3)$	

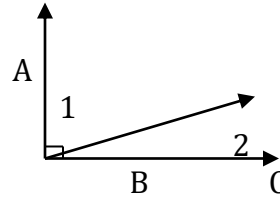
*the "Given" has been skipped for #3



3.	Statements	Reasons
	1. $HJ = HI + IJ$	1. _____
	2. $7x - 3 = (2x + 6) + (3x - 3)$	2. _____
	3. $7x - 3 = 5x + 3$	3. _____
	4. _____	4. _____
	5. $2x = 6$	5. _____
	6. _____	6. _____

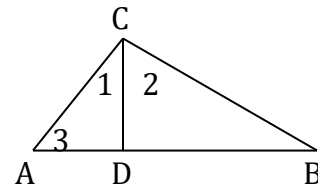
Complete each Geometric proof.

4. Given: $m\angle ABC = 90^\circ$
 $m\angle 1 = 4(m\angle 2)$
 Prove: $m\angle 2 = 18^\circ$



Statements	Reasons

5. Given: $\overline{AC} \perp \overline{BC}$
 $\angle 3$ is complementary to $\angle 1$
 Prove: $\angle 3 \cong \angle 2$



Statements	Reasons

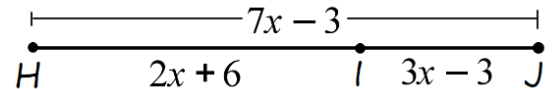
Intro to Algebraic and Geometric Proofs Answer Key

Give the statement and reason for each Algebraic proof.

1.	Statements	Reasons
	<ol style="list-style-type: none"> 1. $\frac{2x-10}{3} = -12$ 2. $2x - 10 = -36$ 3. $2x = -26$ 4. $x = -13$ 	<ol style="list-style-type: none"> 1. Given 2. Multiplication Property of Equality 3. Addition Property of Equality 4. Division Property of Equality

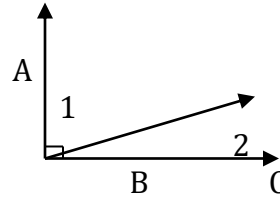
2.	Statements	Reasons
	<ol style="list-style-type: none"> 1. $x + 6.5 = 3(x - 1.3)$ 2. $x + 6.5 = 3x - 3.9$ 3. $6.5 = 2x - 3.9$ 4. $10.4 = 2x$ 5. $5.2 = x$ 	<ol style="list-style-type: none"> 1. Given 2. Distributive Property 3. Subtraction Property of Equality 4. Addition Property of Equality 5. Division Property of Equality

3.	Statements	Reasons
	<ol style="list-style-type: none"> 1. $HJ = HI + IJ$ 2. $7x - 3 = (2x + 6) + (3x - 3)$ 3. $7x - 3 = 5x + 3$ 4. $2x - 3 = 3$ 5. $2x = 6$ 6. $x = 3$ 	<ol style="list-style-type: none"> 1. <u>Segment Addition</u> 2. <u>Substitution Property of Equality</u> 3. <u>Simplify</u> 4. <u>Subtraction Property of Equality</u> 5. <u>Addition Property of Equality</u> 6. <u>Division Property of Equality</u>



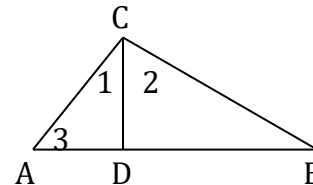
Complete each Geometric proof.

4. Given: $m\angle ABC = 90^\circ$
 $m\angle 1 = 4(m\angle 2)$
 Prove: $m\angle 2 = 18^\circ$



Statements	Reasons
1. $m\angle ABC = 90^\circ, m\angle 1 = 4(m\angle 2)$	1. Given
2. $m\angle 1 + m\angle 2 = m\angle ABC$	2. Angle Addition
3. $m\angle 1 + m\angle 2 = 90^\circ$	3. Substitution
4. $4(m\angle 2) + m\angle 2 = 90^\circ$	4. Substitution
5. $5(m\angle 2) = 90^\circ$	5. Addition Prop of Equal
6. $m\angle 2 = 18^\circ$	6. Division Prop of Equal

5. Given: $\overline{AC} \perp \overline{BC}$
 $\angle 3$ is complementary to $\angle 1$
 Prove: $\angle 3 \cong \angle 2$



Statements	Reasons
1. $\overline{AC} \perp \overline{BC}$ $\angle 3$ is complementary to $\angle 1$	1. Given
2. $m\angle ACB = 90^\circ$	2. Def Perpendicular
3. $m\angle 1 + m\angle 2 = m\angle ACB$	3. Angle Addition
4. $m\angle 1 + m\angle 2 = 90^\circ$	4. Substitution
5. $\angle 1$ and $\angle 2$ are complementary	5. Def Complementary Angles
6. $\angle 3 \cong \angle 2$	6. Congruent Complements Theorem
OR	
5. $m\angle 1 + m\angle 3 = 90^\circ$	5. Def Complementary Angles
6. $m\angle 1 + m\angle 3 = m\angle 1 + m\angle 2$	6. Substitution
7. $m\angle 3 = m\angle 2$	7. Subtraction Prop of Equal
8. $\angle 3 \cong \angle 2$	8. Def of \cong Angles