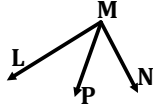


Two-Column Proofs Part 2

Problem #1:

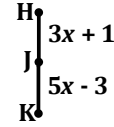


Given: \overline{MP} bisects $\angle LMN$, $m\angle LMP = (5x + 4)^\circ$, &
 $m\angle PMN = (8x - 14)^\circ$

Prove: $m\angle PMN = 34^\circ$

Statements	Reasons
1. \overline{MP} bisects $\angle LMN$, $m\angle LMP = (5x + 4)^\circ$, & $m\angle PMN = (8x - 14)^\circ$	1. _____
2. $\angle LMP \cong \angle PMN$	2. _____
3. $m\angle LMP = m\angle PMN$	3. _____
4. $5x + 4 = 8x - 14$	4. _____
5. $4 = 3x - 14$	5. _____
6. _____	6. Addition Property of Equality
7. _____	7. Division Property of Equality
8. _____	8. Symmetric Property of Equality
9. _____	9. Substitution Property of Equality
10. _____	10. Simplify

Problem #2:



Given: J is the midpoint of \overline{HK}
Prove: $HJ = 7$

Each Step of Math	What I did/knew to get to that step of Math
1. _____	1. Given
2. _____	2. Definition of a Midpoint
3. _____	3. Definition of Congruence
4. _____	4. Substitution Property of Equality
5. _____	5. Subtraction Property of Equality
6. $4 = 2x$	6. _____
7. $2 = x$	7. _____
8. $x = 2$	8. _____
9. $HJ = 3(2) + 1$	9. _____
10. $HJ = 7$	10. _____

Two-Column Proofs Part 2

Problem #3:

Given: \overline{BC} goes through $\angle ABD$. $m\angle ABC = (5x + 7)^\circ$,
 $m\angle ABD = (11x + 20)^\circ$ & $m\angle CBD = (8x - 5)^\circ$

Prove: $m\angle ABC = 52^\circ$

Statements	Reasons
1. \overline{BC} goes through $\angle ABD$. $m\angle ABC = (5x + 7)^\circ$, $m\angle ABD = (11x + 20)^\circ$ & $m\angle CBD = (8x - 5)^\circ$	1. _____
2. $m\angle ABC + m\angle CBD = m\angle ABD$	2. _____
3. $5x + 7 + 8x - 5 = 11x + 20$	3. _____
4. $13x + 2 = 11x + 20$	4. _____
5. _____	5. Subtraction Property of Equality
6. _____	6. Subtraction Property of Equality
7. _____	7. Division Property of Equality
8. _____	8. Substitution Property of Equality
9. _____	9. Simplify

Problem #4:

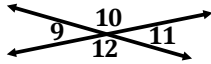
Given: L is between K and M . $KM = 16x + 4$,
 $KL = 5x + 9$ & $LM = 6x$

Prove: $KM = 20$

Statements	Reasons
1. _____	1. Given
2. _____	2. Segment Addition
3. _____	3. Substitution Property of Equality
4. _____	4. Simplify
5. _____	5. Subtraction Property of Equality
6. $5 = 5x$	6. _____
7. $1 = x$	7. _____
8. $x = 1$	8. _____
9. $KM = 16(1) + 4$	9. _____
10. $KM = 20$	10. _____

Two-Column Proofs Part 2

Problem #5:

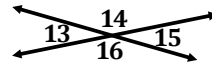


Given: $\angle 10$ & $\angle 11$ are a linear pair, $m\angle 10 = (8x + 24)^\circ$
 & $m\angle 11 = (x + 3)^\circ$

Prove: $m\angle 11 = 20^\circ$

Statements	Reasons
1. $\angle 10$ & $\angle 11$ are a linear pair, $m\angle 10 = (8x + 24)^\circ$ & $m\angle 11 = (x + 3)^\circ$	1. _____
2. $m\angle 10 + m\angle 11 = 180$	2. _____
3. $8x + 24 + x + 3 = 180$	3. _____
4. $9x + 27 = 180$	4. _____
5. _____	5. Subtraction Property of Equality
6. _____	6. Division Property of Equality
7. _____	7. Substitution Property of Equality
8. _____	8. Simplify

Problem #6: Following instructions to write the Math



$\angle 13$ & $\angle 14$ are a linear pair
 $m\angle 13 = (4x - 14)^\circ$ $m\angle 14 = ?$
 & $m\angle 14 = (15x + 4)^\circ$

Given: $\angle 13$ & $\angle 14$ are a linear pair, $m\angle 13 = (4x - 14)^\circ$
 & $m\angle 14 = (15x + 4)^\circ$

Prove: $m\angle 14 = 154^\circ$

Statements	Reasons
1. _____	1. Given
2. _____	2. Linear Pair Theorem
3. _____	3. Substitution Property of Equality
4. _____	4. Simplify
5. $19x = 190$	5. _____
6. $x = 10$	6. _____
7. $m\angle 14 = 15(10) + 4$	7. _____
8. $m\angle 14 = 154^\circ$	8. _____

Two-Column Proofs Part 2

Problem #7:

Given: \overline{FG} bisects $\angle EFH$. $m\angle EFG = (6x + 12)^\circ$,
& $m\angle EFH = (15x + 18)^\circ$

Prove: $m\angle GFH = 24^\circ$

Statements	Reasons
1. \overline{FG} bisects $\angle EFH$. $m\angle EFG = (6x + 12)^\circ$, & $m\angle EFH = (15x + 18)^\circ$	1. _____
2. $2(m\angle EFG) = m\angle EFH$	2. _____
3. $2(6x + 12) = 15x + 18$	3. _____
4. $12x + 24 = 15x + 18$	4. _____
5. $24 = 3x + 18$	5. _____
6. $6 = 3x$	6. _____
7. _____	7. Division Property of Equality
8. _____	8. Symmetric Property of Equality
9. _____	9. Definition of a Bisector
10. _____	10. Definition of Congruence
11. _____	11. Substitution Property of Equality
12. _____	12. Substitution Property of Equality
13. _____	13. Simplify

Problem #8:

Given: S is the midpoint of \overline{RT} . $RS = 7x + 10$, &
 $ST = 5x + 18$

Prove: $RT = 76$

Statements	Reasons
1. _____	1. Given
2. _____	2. Definition of a Midpoint
3. _____	3. Definition of Congruence
4. _____	4. Substitution Property of Equality
5. _____	5. Subtraction Property of Equality
6. _____	6. Subtraction Property of Equality
7. $x = 4$	7. _____
8. $2(RS) = RT$	8. _____
9. $2(7x + 10) = RT$	9. _____
10. $14x + 20 = RT$	10. _____
11. $14(4) + 20 = RT$	11. _____
12. $76 = RT$	12. _____
13. $RT = 76$	13. _____