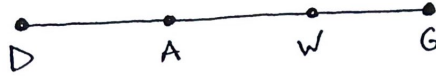


Intro to Proofs QUEST

Name: _____

Period: _____ Date: _____

Use the following diagram for problems #1 and 2.



Given: $\overline{DA} \cong \overline{WG}$

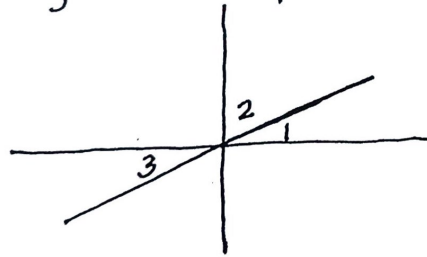
Prove: $DW = AG$

Statement	Reasoning
① $\overline{DA} \cong \overline{WG}$	① Given
② $DA = WG$	② Def. \cong
③ $DA + AW = WG + AW$	③ Seg. Add.
④ $DW = DA + AW$	④ Seg. Add.
⑤ $AG = WG + AW$	⑤ Seg. Add.
⑥ $DW = AG$	⑥ Substitution

② Given: $DG = 25, DA = x, AW = 2x, WG = 2x$
Prove: $x = 5$

Statement	Reasoning
① $DG = 25, DA = x, AW = 2x, WG = 2x$	① Given
② $DA + AW + WG = DG$	② Seg. Add.
③ $x + 2x + 2x = 25$	③ Substitution
④ $5x = 25$	④ Addition
⑤ $x = 5$	⑤ Division

Use the following diagram for problems #3 and 4.



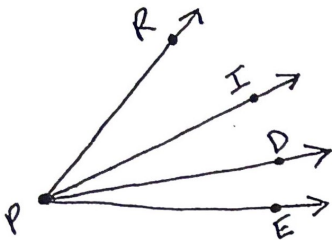
Given: $\angle 1$ and $\angle 2$ are complementary
Prove: $\angle 2$ and $\angle 3$ are complementary

Statement	Reasoning
① $\angle 1 + \angle 2$ are comp.	① Given
② $m\angle 1 + m\angle 2 = 90$	② Def. Comp. \angle 's
③ $m\angle 1 = m\angle 3$	③ Vertical \angle 's
④ $m\angle 3 + m\angle 2 = 90$	④ Substitution

④ Given: $\angle 1$ and $\angle 2$ are complementary
 $m\angle 2 = 57^\circ$
Prove: $m\angle 3 = 33^\circ$

Statement	Reasoning
① $\angle 1 + \angle 2$ are comp. $m\angle 2 = 57$	① Given
② $m\angle 1 + m\angle 2 = 90$	② Def. Comp. \angle 's
③ $m\angle 1 + 57 = 90$	③ Substitution
④ $m\angle 1 = 33$	④ Subtraction
⑤ $m\angle 1 = m\angle 3$	⑤ Vertical \angle 's
⑥ $m\angle 3 = 33$	⑥ Transitive Prop.

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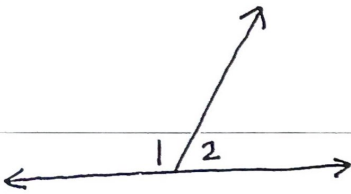


Given: $m\angle RPD = m\angle IPE$

Prove: $m\angle RPI = m\angle DPE$

Statement	Reasoning
① $m\angle RPD = m\angle IPE$	① Given
② $m\angle RPD = m\angle RPI + m\angle IPD$	② Angle Addition
③ $m\angle IPE = m\angle DPE + m\angle IPD$	③ Angle Addition
④ $m\angle RPI + m\angle IPD = m\angle IPD + m\angle DPE$	④ Substitution
⑤ $m\angle RPI = m\angle DPE$	⑤ Subtraction

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Given: $m\angle 1 = 7x - 12$

$m\angle 2 = 3x + 2$

Prove: $x = 19$

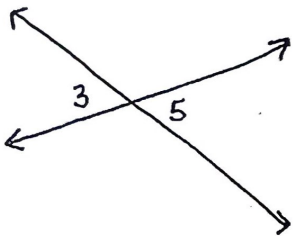
Statement	Reasoning
① $m\angle 1 = 7x - 12, m\angle 2 = 3x + 2$	① Given
② $m\angle 1 + m\angle 2 = 180$	② Def. Linear Pair
③ $7x - 12 + 3x + 2 = 180$	③ Substitution
④ $10x - 10 = 180$	④ Addition
⑤ $10x = 190$	⑤ Addition
⑥ $x = 19$	⑥ Division

Given: $m\angle 3 = 7x - 5$

$m\angle 5 = 4x + 28$

Prove: $x = 11$

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Statement	Reasoning
① $m\angle 3 = 7x - 5, m\angle 5 = 4x + 28$	① Given
② $m\angle 3 = m\angle 5$	② Vertical \angle 's
③ $7x - 5 = 4x + 28$	③ Substitution
④ $3x - 5 = 28$	④ Subtraction
⑤ $3x = 33$	⑤ Addition
⑥ $x = 11$	⑥ Division