

Proof Practice

Given: $5x - 18 = 3x + 2$

Prove: $x = 10$

Reason Choices: ~~Addition Prop.~~,
~~Division Prop.~~, ~~Given~~,
~~Subtraction Prop.~~

Statements

1. $5x - 18 = 3x + 2$
2. $2x - 18 = 2$
3. $2x = 20$
4. $x = 10$

Reasons

1. given
2. Subtraction Prop
3. Addition Prop
4. Division Prop

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Given: $3x + 12 = 8x - 18$

Prove: $x = 6$

Reason Choices: Addition Prop.,
 Division Prop., Given,
 Subtraction Prop., Symmetric
 Prop.

Statements

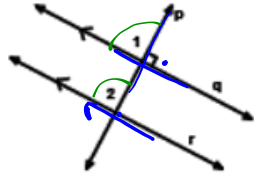
1. $3x + 12 = 8x - 18$
2. $12 = 5x - 18$
3. $30 = 5x$
4. $6 = x$
5. $x = 6$

Reasons

1. _____
2. _____
3. _____
4. _____
5. _____

1 Given: $p \perp q$ and $q \parallel r$
 Prove: $p \perp r$

Reasons: Given, Def. of Right \angle , Def. of Perpendicular Lines, Def. of Congruent \angle s, Substitution, Corresponding \angle s Post.

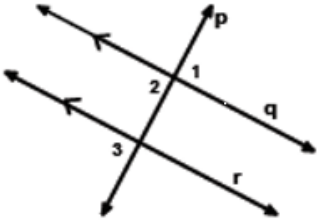


Statements	Reasons
1. $p \perp q$	1. <u>given</u>
2. $\angle 1$ is a right angle	2. <u>def. of perp. lines</u>
3. $m\angle 1 = 90^\circ$	3. <u>def. of right \angle.</u>
4. $q \parallel r$	4. <u>given</u>
5. $\angle 1 \cong \angle 2$	5. <u>Corresponding \angle's.</u>
6. $m\angle 1 = m\angle 2$	6. <u>def. of Congruence.</u>
7. $m\angle 2 = 90^\circ$	7. <u>Substitution</u>
8. $\angle 2$ is a right angle	8. <u>definition of right \angle.</u>
9. $p \perp r$	9. <u>def. of perp. lines.</u>

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2 Given: $q \parallel r$
 Prove: $\angle 1 \cong \angle 3$

Reasons: Given, Corresponding \angle s, Vertical \angle Congruence, Transitive Prop.

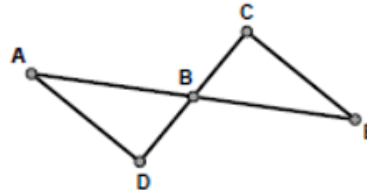


Statements	Reasons
1. $q \parallel r$	1. _____
2. $\angle 1 \cong \angle 2$	2. _____
3. $\angle 2 \cong \angle 3$	3. _____
4. $\angle 1 \cong \angle 3$	4. _____

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3

Given: \overline{AE} bisects \overline{DC}
 $\angle C \cong \angle D$
 Prove: $\triangle ABD \cong \triangle EBC$



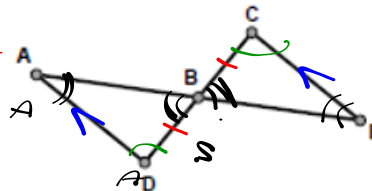
Reasons: Given, Vertical \angle Congruence, ASA, Def. of Segment Bisector

Statements	Reasons
1. $\angle C \cong \angle D$	1. _____
2. \overline{AE} bisects \overline{DC}	2. _____
3. $\overline{CB} \cong \overline{BD}$	3. _____
4. $\angle ABD \cong \angle CBE$	4. _____
5. $\triangle ABD \cong \triangle EBC$	5. _____

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4

Given: $\overline{AD} \parallel \overline{CE}$ and $\overline{BD} \cong \overline{BC}$
 Prove: $\triangle ABD \cong \triangle EBC$



Reasons: Given, AAS, Alternate Interior \angle

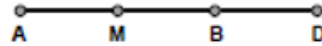
Statements	Reasons
1. $\overline{AD} \parallel \overline{CE}$	1. <u>given</u>
2. $\angle D \cong \angle C$	2. <u>Alternate Interior \angle's</u>
3. $\angle A \cong \angle E$	3. <u>Alternate Interior \angle's</u>
4. $\overline{BD} \cong \overline{BC}$	4. <u>given</u>
5. $\triangle ABD \cong \triangle EBC$	5. <u>AAS \Rightarrow ASA</u>

5

Given: M is the midpoint of \overline{AB}
 B is the midpoint of \overline{MD}

Prove: $MD = 2MB$

Reasons: Given, Distributive Prop.,
 Segment Addition Post.,
 Substitution, Def. of Congruence,
 Def. of Midpoint



Statements

1. M is the midpoint of \overline{AB}
2. B is the midpoint of \overline{MD}
3. $AM \cong MB$ and $MB \cong BD$
4. $AM = MB$ and $MB = BD$
5. $MD = MB + BD$
6. $MD = MB + MB$
7. $MD = 2MB$

Reasons

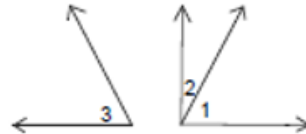
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

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6

Given: $\angle 2$ and $\angle 3$ are complementary
 $m\angle 1 + m\angle 2 = 90^\circ$

Prove: $\angle 1 \cong \angle 3$



Statements

1. $\angle 2$ and $\angle 3$ are complementary
2. $m\angle 2 + m\angle 3 = 90^\circ$
3. $m\angle 1 + m\angle 2 = 90^\circ$
4. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$
5. $m\angle 1 = m\angle 3$
6. $\angle 1 \cong \angle 3$

Reasons

1. given
2. def. of complementary
3. given
4. Substitution.
5. subtraction
6. Congruence.

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