Two-Column Proof

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Complete the proof by giving the reason for the indicated step.

If $\frac{2}{3}x = 8 - 2x$, then $x = 3$.

Given: $\frac{2}{3}x = 8 - 2x$ Prove: $x = 3$

⇒ a. $\frac{2}{3}x = 8 - 2x$
b. $2x = 3(8 - 2x)$
c. $2x = 24 - 6x$
d. $8x = 24$
e. $x = 3$

a. Substitution property of equality
b. Multiplication property of equality
c. Reflexive property of equality
d. Given

Complete the proof by giving the reason for the indicated step.

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b. $2x = 3(8 - 2x)$
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d. $8x = 24$
e. $x = 3$

a. Distributive property
b. Multiplication property of equality
c. Associative property of equality
d. Commutative property of equality

Complete the proof by giving the reason for the indicated step.

If $\frac{2}{3}x = 8 - 2x$, then $x = 3$.

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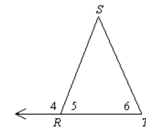
b. $2x = 3(8 - 2x)$
c. $2x = 24 - 6x$
d. $8x = 24$
⇒ e. $x = 3$

a. Addition property of equality
b. Division property of equality
c. Symmetric property of equality
d. Multiplication property of equality

Copy and complete the proof. Give the reason for the indicated step.

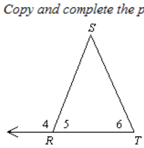


If $m\angle 4 + m\angle 6 = 180°$, then $m\angle 5 = m\angle 6$.
Given: $m\angle 4 + m\angle 6 = 180°$ Prove: $m\angle 5 = m\angle 6$

⇒ a. $m\angle 4 + m\angle 6 = 180°$
b. $m\angle 4 + m\angle 5 = 180°$
c. $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$
d. $m\angle 4 = m\angle 4$
e. _?_ = _?_

a. Symmetric property of equality
b. Given
c. Definition of linear angles
d. Addition property of equality

Copy and complete the proof. Give the reason for the indicated step.



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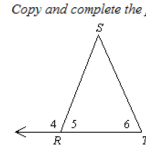
Given: $m\angle 4 + m\angle 6 = 180°$ Prove: $m\angle 5 = m\angle 6$

a. $m\angle 4 + m\angle 6 = 180°$
b. $m\angle 4 + m\angle 5 = 180°$
⇒ c. $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$
d. $m\angle 4 = m\angle 4$
e. _?_ = _?_

a. Reflexive property of equality
b. Substitution property of equality
c. Given
d. Addition property of equality

Copy and complete the proof. Give the reason for the indicated step.



If $m\angle 4 + m\angle 6 = 180°$, then $m\angle 5 = m\angle 6$.
Given: $m\angle 4 + m\angle 6 = 180°$ Prove: $m\angle 5 = m\angle 6$

a. $m\angle 4 + m\angle 6 = 180°$
b. $m\angle 4 + m\angle 5 = 180°$
c. $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$
⇒ d. $m\angle 4 = m\angle 4$
e. _?_ = _?_

a. Subtraction property of equality
b. Symmetric property of equality
c. Reflexive property of equality
d. Addition property of equality

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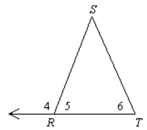
Copy and complete the proof. Give the reason for the indicated step.



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Given: $m\angle 4 + m\angle 6 = 180°$ Prove: $m\angle 5 = m\angle 6$

a. $m\angle 4 + m\angle 6 = 180°$
b. $m\angle 4 + m\angle 5 = 180°$
c. $m\angle 4 + m\angle 5 = m\angle 4 + m\angle 6$
d. $m\angle 4 = m\angle 4$
⇒ e. __?__ = __?__

a. $m\angle 5 = m\angle 6$; Subtraction Property of equality
b. $m\angle 4 = m\angle 6$; Given
c. $m\angle 4 = m\angle 5$; Given
d. $m\angle 4 = m\angle 5 = m\angle 6$; Reflexive property of equality

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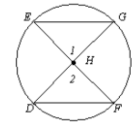
Write a two-column proof. Give a reason for the indicated step.
Given: Circle H; arc $EG \cong$ arc DF
Prove: $\overline{EG} \cong \overline{DF}$



Proof
a. arc $EG \cong$ arc DF
⇒ b. $\overline{HE} \cong \overline{HD}$ and $\overline{HG} \cong \overline{HF}$
c. $\angle 1 \cong \angle 2$
d. $\Delta EHG \cong \Delta DHF$
e. $\overline{EG} \cong \overline{DF}$

a. All diameters of a circle are congruent.
b. All radii of a circle are congruent.
c. Congruent arcs have congruent chords.
d. Chords are congruent.

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Write a two-column proof. Give a reason for the indicated step.
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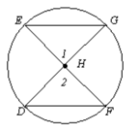
Prove: $\overline{EG} \cong \overline{DF}$



Proof
a. arc $EG \cong$ arc DF
b. $\overline{HE} \cong \overline{HD}$ and $\overline{HG} \cong \overline{HF}$
⇒ c. $\angle 1 \cong \angle 2$
d. $\Delta EHG \cong \Delta DHF$
e. $\overline{EG} \cong \overline{DF}$

a. Congruent arcs have congruent chords.
b. Corresponding central angles to congruent arcs are congruent.
c. Minor arcs are congruent.
d. Linear pairs of angles are congruent.

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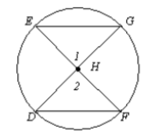
Write a two-column proof. Give a reason for the indicated step.
Given: Circle H; arc $EG \cong$ arc DF
Prove: $\overline{EG} \cong \overline{DF}$



Proof
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⇒ d. $\Delta EHG \cong \Delta DHF$
e. $\overline{EG} \cong \overline{DF}$

a. SAS
b. ASA
c. SSS
d. AA