

Triangles

Hw Extra Practice Unit 4

<p>1. Mark the picture. $\Delta CBA \cong \Delta CWX$</p>	<p>2. Given $\angle T = x^2$ and $\angle I = 3x + 18$. Find x.</p> <p style="color: red;"> $x^2 = 3x + 18$ $x^2 - 3x - 18 = 0$ $(x - 6)(x + 3) = 0$ $x - 6 = 0 \quad \quad x + 3 = 0$ $x = 6 \quad \quad x = -3$ </p>
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In order to prove that two triangles are congruent, you must show that every corresponding angle and every corresponding side is congruent.

3. Mark the picture and then prove it. Show ALL SIDES and ALL ANGLES \cong !!!

<p>Given: $\overline{GI} \parallel \overline{TR}$ H is the midpoint of \overline{GT} $\overline{GI} \cong \overline{RT}$ $\overline{HR} \cong \overline{IH}$</p> <p>Prove: $\Delta GHI \cong \Delta THR$</p>	
STATEMENTS	REASONS
<p>1. $\overline{GI} \parallel \overline{TR}$ H is the midpoint of \overline{GT} $\overline{GI} \cong \overline{RT}$ $\overline{HR} \cong \overline{IH}$</p>	<p>1. GIVEN</p>
<p>2. $\overline{GH} \cong \overline{HT}$</p>	<p>2. Midpoint Theorem</p>
<p>3. $\angle G \cong \angle T$</p>	<p>3. Alternate Interior Angles are congruent Theorem</p>
<p>4. $\angle I \cong \angle R$</p>	<p>4. Alt Int \angle Theorem</p>
<p>5. $\angle IHG \cong \angle RHT$</p>	<p>5. Vertical \angles Theorem</p>
<p>6. $\Delta GHI \cong \Delta THR$</p>	<p>6. Definition of Congruent Triangles</p>

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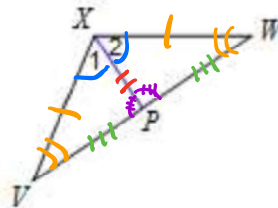
4. Mark the picture and then prove it. Show ALL SIDES and ALL ANGLES \cong !!!

Given: $\triangle VXW$ is an isosceles triangle with base \overline{VW}

\overline{XP} is an angle bisector of $\angle VXW$

P is the midpoint of \overline{VW}

$\angle VPX \cong \angle WPX$



Prove: $\triangle PVX \cong \triangle PWX$

STATEMENTS	REASONS
1. $\triangle VXW$ is an isosceles triangle \overline{XP} is an angle bisector of $\angle VXW$ P is the midpoint of \overline{VW} $\angle VPX \cong \angle WPX$	1. GIVEN
2. $\overline{XP} \cong \overline{XP}$	2. Congruence of segments is reflexive
3. $\overline{VX} \cong \overline{XW}$	3. Def'n of Isosceles \triangle
4. $\overline{VP} \cong \overline{PW}$	4. Midpoint Theorem
5. $\angle VXP \cong \angle WXP$	5. Def'n of angle bisector
6. $\angle XVP \cong \angle XWP$	6. Isosceles \triangle Theorem
7. $\triangle PVX \cong \triangle PWX$	7. Def'n of $\cong \triangle$ s

SSS and SAS

Extra Practice Section 4.2

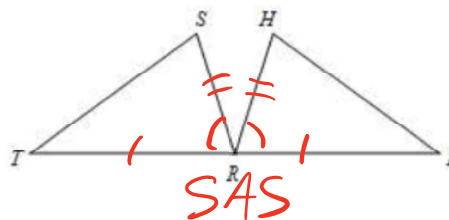
1. Mark the picture, state why the two triangles are congruent, then prove it!

Given: $\angle SRT \cong \angle HRF$

R is the midpoint of \overline{TF}

$\overline{SR} \cong \overline{HR}$

Prove: $\triangle TSR \cong \triangle HFR$



STATEMENTS	REASONS
1. $\angle SRT \cong \angle HRF$ R is the midpoint of \overline{TF} $\overline{SR} \cong \overline{HR}$	Given
2. $\overline{TR} \cong \overline{RF}$	Midpoint Theorem
3. $\triangle TSR \cong \triangle HFR$	SAS \cong Postulate

Hw Extra Practice Unit 4

2. Mark the picture, state why the two triangles are congruent, then prove it!

<p>Given: $\overline{AB} \cong \overline{DC}$ $\angle ABC$ and $\angle DCB$ are right angles</p> <p>Prove: $\triangle ABC \cong \triangle DCB$</p>		
STATEMENTS	REASONS	
1 $\overline{AB} \cong \overline{DC}$ $\angle ABC$ and $\angle DCB$ are right angles	Given	
2 $\angle ABC \cong \angle DCB$	All right \angle s are congruent	
3 $\overline{BC} \cong \overline{BC}$	Congruence of segments is Reflexive (or Reflexive prop. of \cong)	
4 $\triangle ABC \cong \triangle DCB$	SAS \cong Postulate	

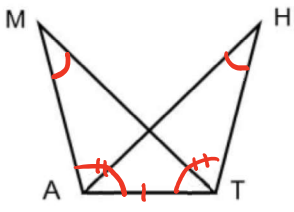
AAS and ASA

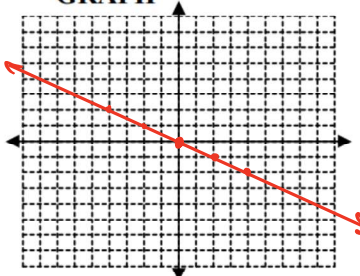
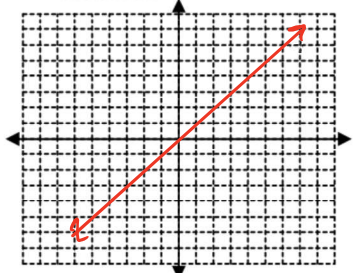
1. Mark the picture, state why the two triangles are congruent, then prove it!

<p>Given: $\angle HGI \cong \angle CID$ $\angle CDI$ is a right angle \overline{HI} is the perpendicular bisector of \overline{GD}</p> <p>Prove: $\triangle HGI \cong \triangle CID$</p>		<p>ASA</p>
STATEMENTS	REASONS	
$\angle HGI \cong \angle CID$ $\angle CDI$ is a right angle \overline{HI} is the \perp bisector of \overline{GD}	Given	
$\angle HIG$ is a right angle	Def'n of \perp	
$\angle HIG \cong \angle CDI$	All right \angle 's are \cong	
$\overline{GI} \cong \overline{ID}$	Def'n of bisector	
$\triangle HGI \cong \triangle CID$	ASA \cong Postulate	

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2. Mark the picture, state why the two triangles are congruent, then prove it!

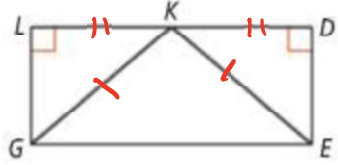
<p>Given: $\angle M \cong \angle H$ $\angle MAT \cong \angle HTA$</p> <p>Prove: $\triangle MAT \cong \triangle HTA$</p>	
STATEMENTS	REASONS
$\angle M \cong \angle H$ $\angle MAT \cong \angle HTA$	<p style="color: red; font-size: 1.2em;">Given</p>
$\overline{AT} \cong \overline{AT}$	<p style="color: red;">Congruence of segments is Reflexive (or Reflexive prop. of \cong)</p>
$\triangle MAT \cong \triangle HTA$	<p style="color: red;">AAS \cong Postulate</p>

ALGEBRA REVIEW		
<p style="text-align: center;">SOLVE</p> $26 = -7 + 3x - 3(2x - 4)$ <p style="color: red;">$26 = -7 + 3x - 6x + 12$</p> <p style="color: red;">$26 = -3x + 5$</p> <p style="color: red;">$21 = -3x$</p> <p style="color: red;">$-7 = x$</p>	<p style="text-align: center;">GRAPH</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $y = -\frac{x}{2}$ $y = -\frac{1}{2}x + 0$ </div>  </div>	<p style="text-align: center;">MULTIPLY</p> $(2x - 3)(3x + 4)$ $= 6x^2 + 8x - 9x - 12$ $= 6x^2 - x - 12$
<p style="text-align: center;">SOLVE</p> <p style="color: blue; font-size: 1.2em;">$6 \cdot 4 \frac{2x-1}{6} = \frac{x+2}{4} 6 \cdot 4$</p> $8x - 4 = 6x + 12$ $2x = 16$ $x = 8$	<p style="text-align: center;">GRAPH</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $y = x$ </div>  </div>	<p style="text-align: center;">FACTOR</p> $x^2 - 12x + 36$ $= (x - 6)^2$

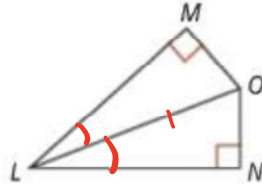
HL

Hw Extra Practice Unit 4

1. Mark the picture, state why the two triangles are congruent, then prove it!

<p>Given: $\triangle GKE$ is isosceles with base \overline{GE}, $\angle L$ and $\angle D$ are right angles, and K is the midpoint of \overline{LD}.</p> <p>Prove: $\overline{LG} \cong \overline{DE}$</p>	
STATEMENTS	REASONS
$\triangle GKE$ is isosceles with base \overline{GE} $\angle L$ and $\angle D$ are right angles K is the midpoint of \overline{LD}	GIVEN
$\overline{KG} \cong \overline{KE}$	Def'n of Isosceles \triangle
$\overline{LK} \cong \overline{KD}$	Midpoint Theorem
$\triangle GLK$ & $\triangle EDK$ are right \triangle s	Def'n of right \triangle
$\triangle GLK \cong \triangle EDK$	HL Theorem
$\overline{LG} \cong \overline{DE}$	CPCTC

2. Mark the picture, state why the two triangles are congruent, then prove it!

<p>Given: \overline{LO} bisects $\angle MLN$, $\overline{OM} \perp \overline{LM}$, $\overline{ON} \perp \overline{LN}$</p> <p>Prove: $\triangle LMO \cong \triangle LNO$</p>	
STATEMENTS	REASONS
\overline{LO} bisects $\angle MLN$ $\overline{OM} \perp \overline{LM}$, $\overline{ON} \perp \overline{LN}$	GIVEN
$\angle MLO \cong \angle LNO$	Def'n of bisects
$\angle M$ is a right angle	Def'n of \perp
$\angle N$ is a right angle	Def'n of \perp
$\angle M \cong \angle N$	All RIGHT Angles are \cong
$\overline{LO} \cong \overline{LO}$	Congruence of Segments is reflexive
$\triangle LMO \cong \triangle LNO$	AAS \cong Postulate

