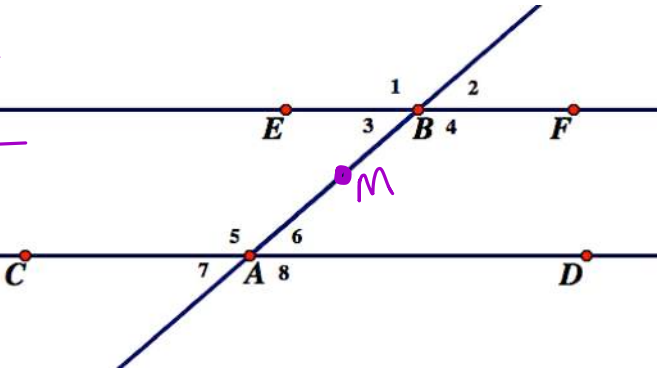
40-43

5. Given: $\overleftrightarrow{BF} \parallel \overleftrightarrow{AD}$
   Prove: Same-side interior angles $\angle 3$ and $\angle 5$ are supplementary

S	R
$\angle 3 \cong \angle 7$	Translate B to A
$\angle 7 \cong \angle 6$	Rotate 180° about A
$\angle 3 \cong \angle 6$	Transitive Prop of equality
$\angle 5$ and $\angle 6$, replaced by $\angle 3$, form a linear pair	Def of linear pair
Linear pairs are supplementary	Property of linear pair
$\angle 3$ & $\angle 5$ are supp.	Linear pairs are supplementary



6. Given: Alternate interior angles $\angle 3$ and $\angle 6$ are congruent
   Prove: $\overleftrightarrow{EF} \parallel \overleftrightarrow{CD}$

1) Since alternate interior angles $\angle 3$ and $\angle 6$ are congruent, we can rotate $\overleftrightarrow{CD}$ around point M, the midpoint of $\overline{AB}$, until $\angle 6$ coincides with $\angle 3$.

2) Since A, M, and B are collinear, for A to coincide with B the angle of rotation must have been 180°.

3) After the rotation, A'C', and O' will lie on $\overleftrightarrow{EF}$. Based on the parallel postulate, rotating $\overleftrightarrow{CD}$ 180° about M produces an image line that is parallel to $\overleftrightarrow{CD}$, and we have shown that this line coincides with $\overleftrightarrow{EF}$. Therefore, $\overleftrightarrow{EF} \parallel \overleftrightarrow{CD}$

5.6

READY, SET, GO! Name Period Date

READY

Topic: Recalling features of the rigid-motion transformations

Complete each statement

1. When I use line segments to connect the corresponding points of a pre-image and the image in a translation, the line segments are congruent and parallel because every point is translated the same distance and direction

2. When I use line segments to connect the corresponding points of a pre-image and the image in a reflection, the line of reflection is the perpendicular bisector of the segments because corresponding points are equidistant from the line of reflection

3. In a rotation, the corresponding points of the pre-image and the image are the same distance from the center of rotation because they move along concentric circles

4. Translations, rotations, and reflections are rigid motion transformations because they maintain congruence between pre-image and image

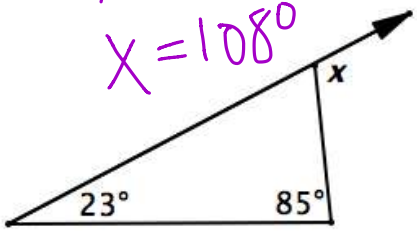
SET

Topic: Solving for missing angles

Use what you know about vertical angles, exterior angles, and the angles formed by parallel lines and transversals to find the value of x in each of the diagrams.

5. $x = 23 + 85$

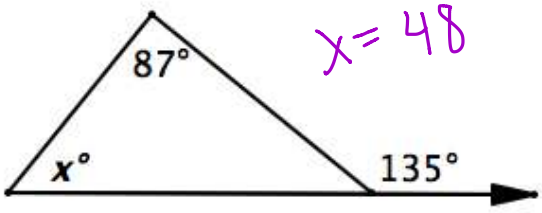
$x = 108°$



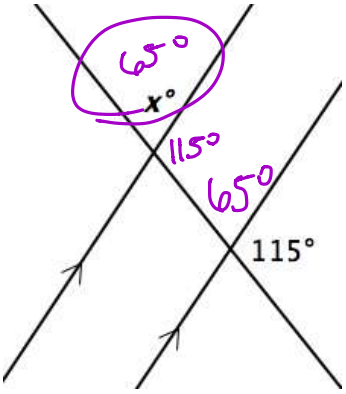
6. $x + 87 = 135$

$-87 \quad -87$

$x = 48$



7.



8.

alt ext ∠'s are ≅

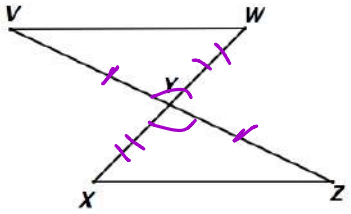
$75 = 2x + 7$

$68 = 2x$

$x = 34$

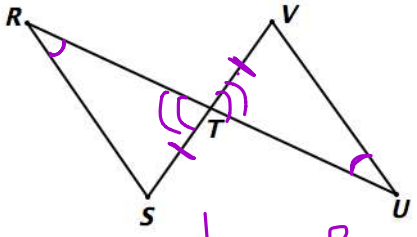
Prove each of the following.

9. Given: Y is the midpoint of $\overline{VZ}$ *and* $\overline{XW}$.
Prove: $\Delta VYW \cong \Delta ZYX$



S	R
Y is midpoint of $\overline{VZ}$ & $\overline{XW}$	Given
$\overline{WY} \cong \overline{XY}$	Def of midpoint
$\overline{VY} \cong \overline{ZY}$	Def of midpoint
$\angle VYW \cong \angle ZYX$	Vertical ∠'s are ≅
$\Delta VYW \cong \Delta ZYX$	SAS

10. Given $\angle R \cong \angle U$ and $\overline{ST} \cong \overline{VT}$.
Prove: $\Delta SRT \cong \Delta VUT$



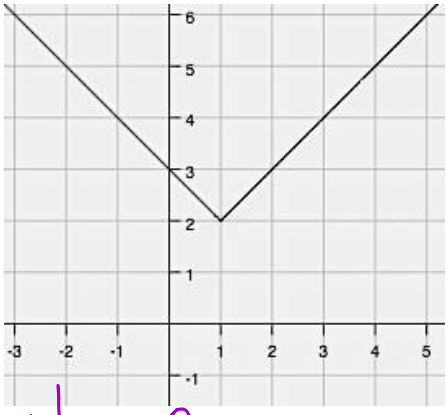
S	R
$\angle R \cong \angle U$ / $\overline{ST} \cong \overline{VT}$	Given
$\angle RTS \cong \angle UVT$	Vertical ∠'s are ≅
$\Delta SRT \cong \Delta VUT$	AAS

GO

Topic: Connecting a piecewise defined equation with the corresponding absolute value equation

The graph of an absolute value function is given. A) Write the equation using absolute value notation. B) Then write the equation as a piecewise defined function.

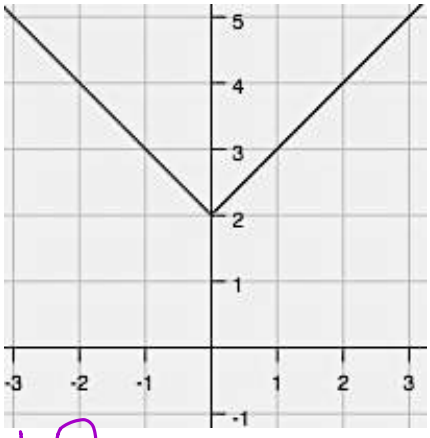
15.



A. $|x-1|+2$

B.

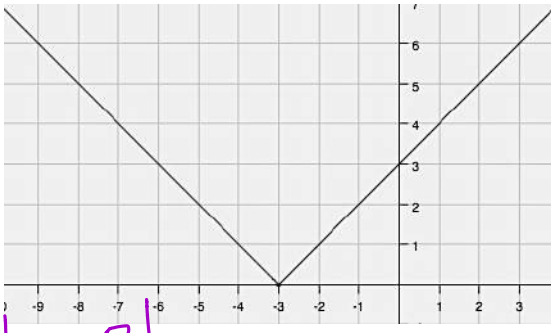
16.



A. $|x|+2$

B.

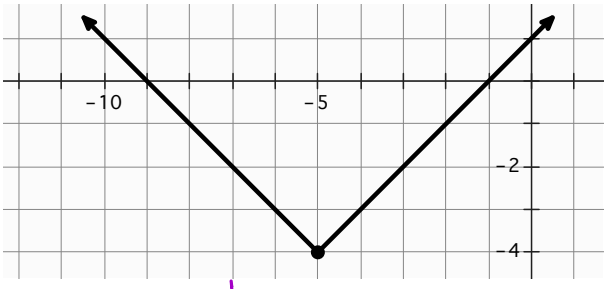
17.



A. $|x+3|$

B.

18.



A. $|x+5|-4$

B.