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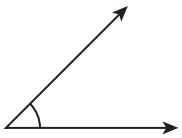
CHAPTER

6 Angle Properties and Straight Lines

Lesson 6.1 Complementary, Supplementary, and Adjacent Angles

Tell whether each angle is an acute, obtuse, or right angle.

1. 

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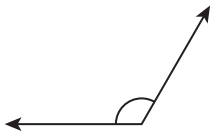
2. 

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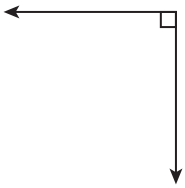
3. 

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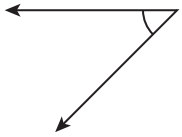
4. 

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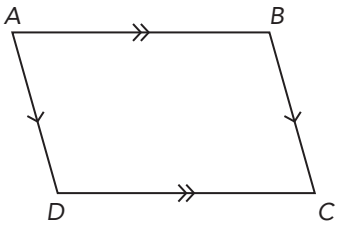
Identify each pair of parallel line segments.

5. 

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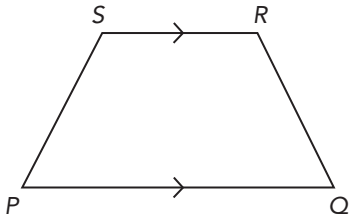
6. 

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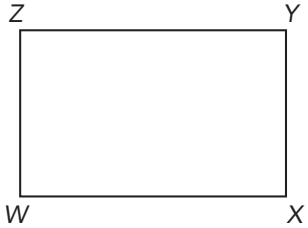
Identify each pair of perpendicular line segments.

7. *WXYZ* is a rectangle.



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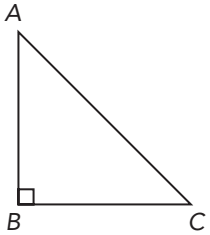
8. 

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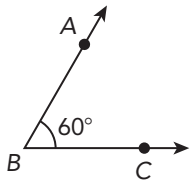
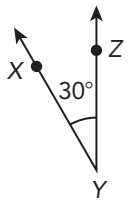
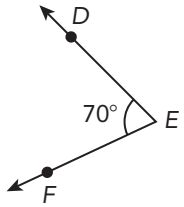
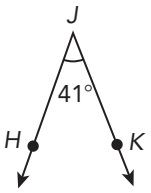
Identify complementary angles.

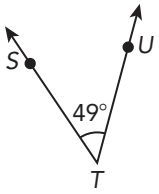
Example











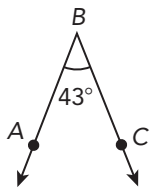
m∠*ABC* = 60° and m∠*XYZ* = 30°.
Since 60° + 30° = 90°, ∠*ABC* and ∠*XYZ* are complementary angles.

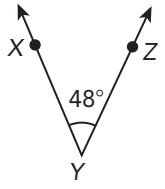
m∠*DEF* = 70° and m∠*PQR* = 20°.
Since 70° + 20° = 90°, ∠*DEF* and ∠*PQR* are complementary angles.

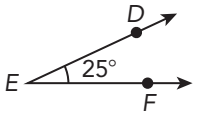
m∠*HJK* = 41° and m∠*STU* = 49°.
Since 41° + 49° = 90°, ∠*HJK* and ∠*STU* are complementary angles.

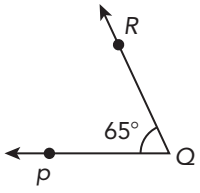
Complete.

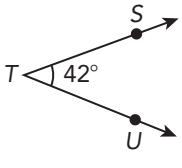
9.

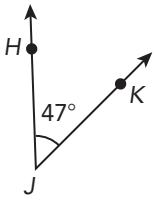












m∠*ABC* = 43° and _____ = _____.

Since 43° + _____ = _____, ∠*ABC* and _____ are complementary angles.

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m∠*XYZ* = _____ and m∠*STU* = _____.

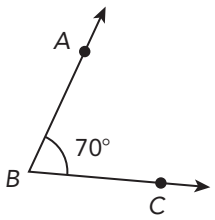
Since _____ + _____ = _____, _____ and _____ are complementary angles.

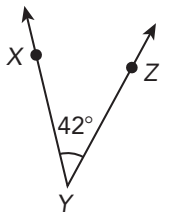
_____ = _____ and _____ = _____.

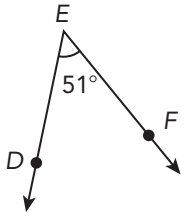
Since _____ + _____ = _____, _____ and _____ are complementary angles.

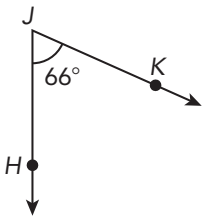
Identify complementary angles.

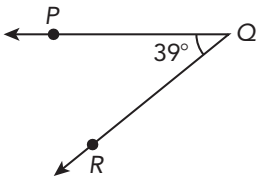
10.

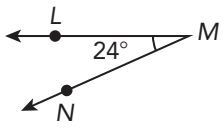


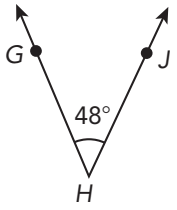












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Find an angle measure involving complementary angles.

Example

Angles X and Y are complementary. Find $m\angle Y$ for each measure of $\angle X$.

a) $m\angle X = 56°$

$m\angle Y = 90° - 56° = 34°$

b) $m\angle X = 45°$

$m\angle Y = 90° - 45° - 45°$

Complete.

11. Angles A and B are complementary. Find $m\angle B$ for each of $m\angle A$.

$m\angle A$	$m\angle B$
23°	90° − 23° = _____
71°	90° − _____ = _____
85°	_____ − _____ = _____

12. Angles P and Q are complementary. Find $m\angle Q$ for each value of $m\angle P$.

$m\angle P$	$m\angle Q$
11°	
78°	
29°	

Tell whether each pair of angles is supplementary.

Example

a) $m\angle A = 95°$ and $m\angle B = 85°$

$m\angle A + m\angle B = 95° + 85°$
$= 180°$

So, $\angle A$ and $\angle B$ are supplementary angles.

b) $m\angle C = 24°$ and $m\angle D = 66°$

$m\angle C + m\angle D = 24° + 66°$
$= 90°$

So, $\angle C$ and $\angle D$ are not supplementary angles.