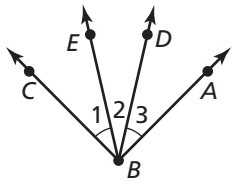
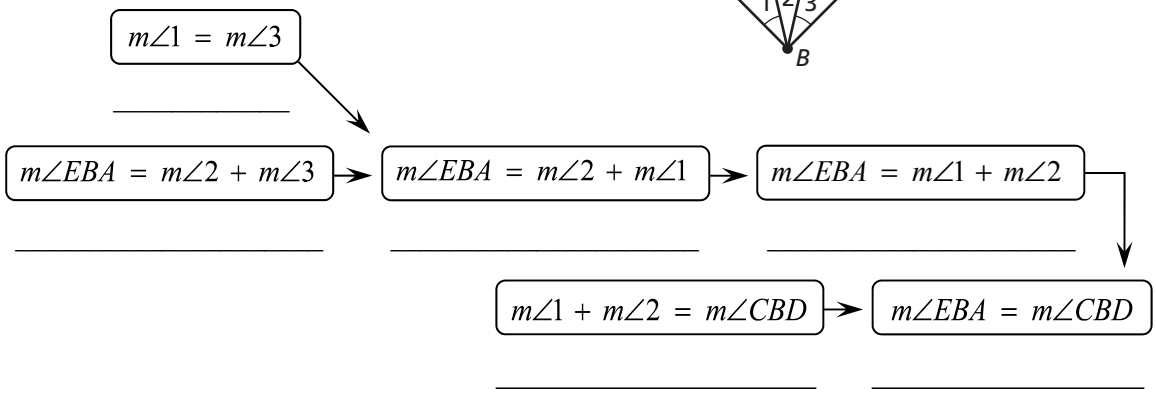
2 EXPLORATION: Matching Reasons in a Flowchart Proof

Work with a partner. Match each reason with the correct step in the flowchart.

Given $m\angle 1 = m\angle 3$

Prove $m\angle EBA = m\angle CBD$





A. Angle Addition Postulate (Post. 1.4)

B. Transitive Property of Equality

C. Substitution Property of Equality

D. Angle Addition Postulate (Post. 1.4)

E. Given

F. Commutative Property of Addition

Communicate Your Answer

3. How can you use a flowchart to prove a mathematical statement?

4. Compare the flowchart proofs above with the two-column proofs in the Section 2.5 Explorations. Explain the advantages and disadvantages of each.

Name_____ Date _____

2.6 Notetaking with Vocabulary

For use after Lesson 2.6

In your own words, write the meaning of each vocabulary term.

flowchart proof, or flow proof

paragraph proof

Theorems and Postulates

Theorem 2.3 Right Angles Congruence Theorem

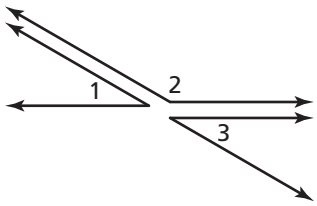
All right angles are congruent.

Notes:

Theorem 2.4 Congruent Supplements Theorem

If two angles are supplementary to the same angle (or to congruent angles), then they are congruent.

If $\angle 1$ and $\angle 2$ are supplementary and $\angle 3$ and $\angle 2$ are supplementary, then $\angle 1 \cong \angle 3$.



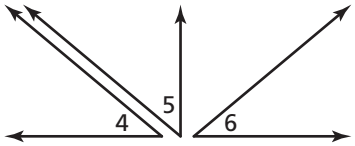
Notes:

Name _____ Date _____

2.6 Notetaking with Vocabulary (continued)

Theorem 2.5 Congruent Complements Theorem

If two angles are complementary to the same angle (or to congruent angles), then they are congruent.

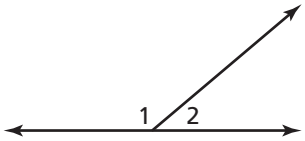


If $\angle 4$ and $\angle 5$ are complementary and $\angle 6$ and $\angle 5$ are complementary, then $\angle 4 \cong \angle 6$.

Notes:

Postulate 2.8 Linear Pair Postulate

If two angles form a linear pair, then they are supplementary.



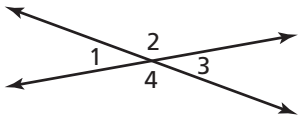
$\angle 1$ and $\angle 2$ form a linear pair, so $\angle 1$ and $\angle 2$ are supplementary and $m\angle 1 + m\angle 2 = 180°$.

Notes:

Theorem 2.6 Vertical Angles Congruence Theorem

Vertical angles are congruent.

Notes:



$\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$

Name_____ Date _____

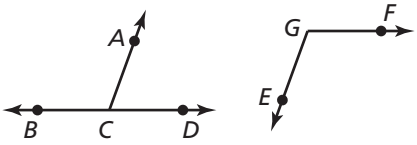
2.6 Notetaking with Vocabulary (continued)

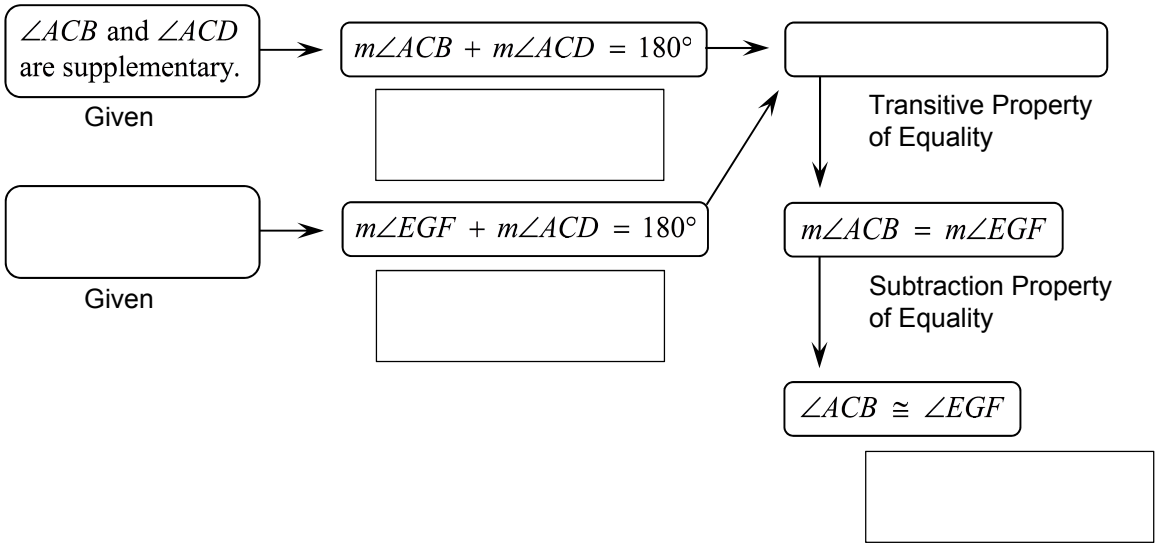
Extra Practice

1. Complete the flowchart proof. Then write a two-column proof.

Given $\angle ACB$ and $\angle ACD$ are supplementary.
$\angle EGF$ and $\angle ACD$ are supplementary.

Prove $\angle ACB \cong \angle EGF$





Two-Column Proof

STATEMENTS	REASONS