

Name _____

Date _____

Period _____

More Properties of Equality // Flow Chart Proofs

Lesson Objective

INBAT write flow chart proofs

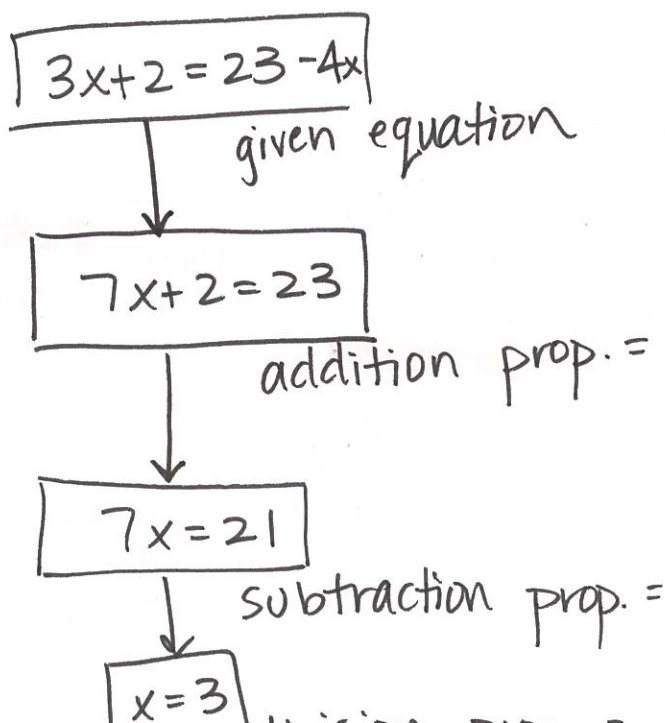
More Properties of Equality* $AB = BA$ is the reflexive prop. = !!!

Name of Property of Equality	Real Numbers	Segment Lengths	Angle Measures
Reflexive Property of Equality	$a = a$	$AB = AB$	$m\angle A = m\angle A$
Symmetric Property of Equality	if $a = b$ then $b = a$	if $AB = CD$ then $CD = AB$	if $m\angle A = m\angle B$ then $m\angle B = m\angle A$
Transitive Property of Equality	if $a = b$ and $b = c$ then $a = c$	if $AB = CD$ and $CD = EF$ then $AB = EF$	if $m\angle A = m\angle B$ and $m\angle B = m\angle C$ then $m\angle A = m\angle C$

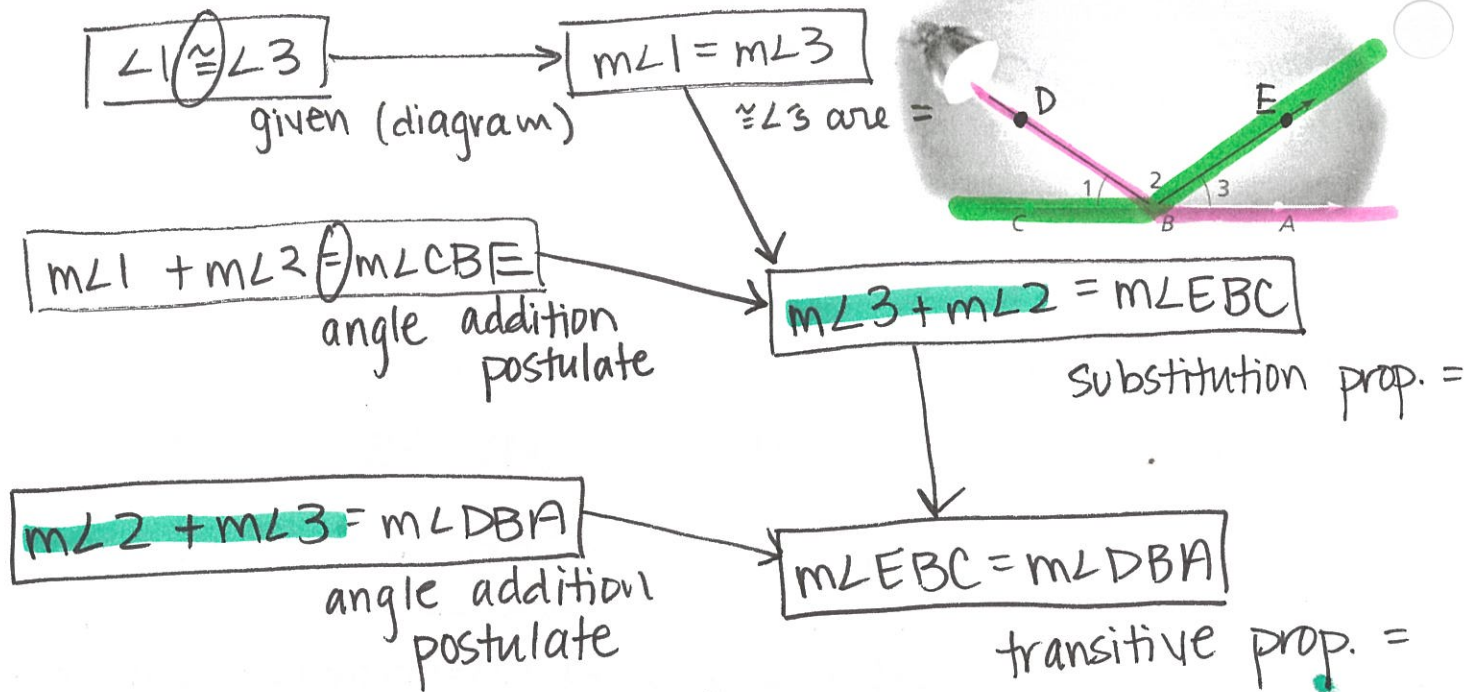
Writing Flow Chart Proofs

* transitive $\rightarrow$ substitution but not necessarily subst. $\rightarrow$ transA flow chart proof uses boxes and arrows to show the flow of the logical argument. $\rightarrow$ Statements are written inside the boxes $\rightarrow$ Each reason associated with the statement is below the statement is justifies.

Example:

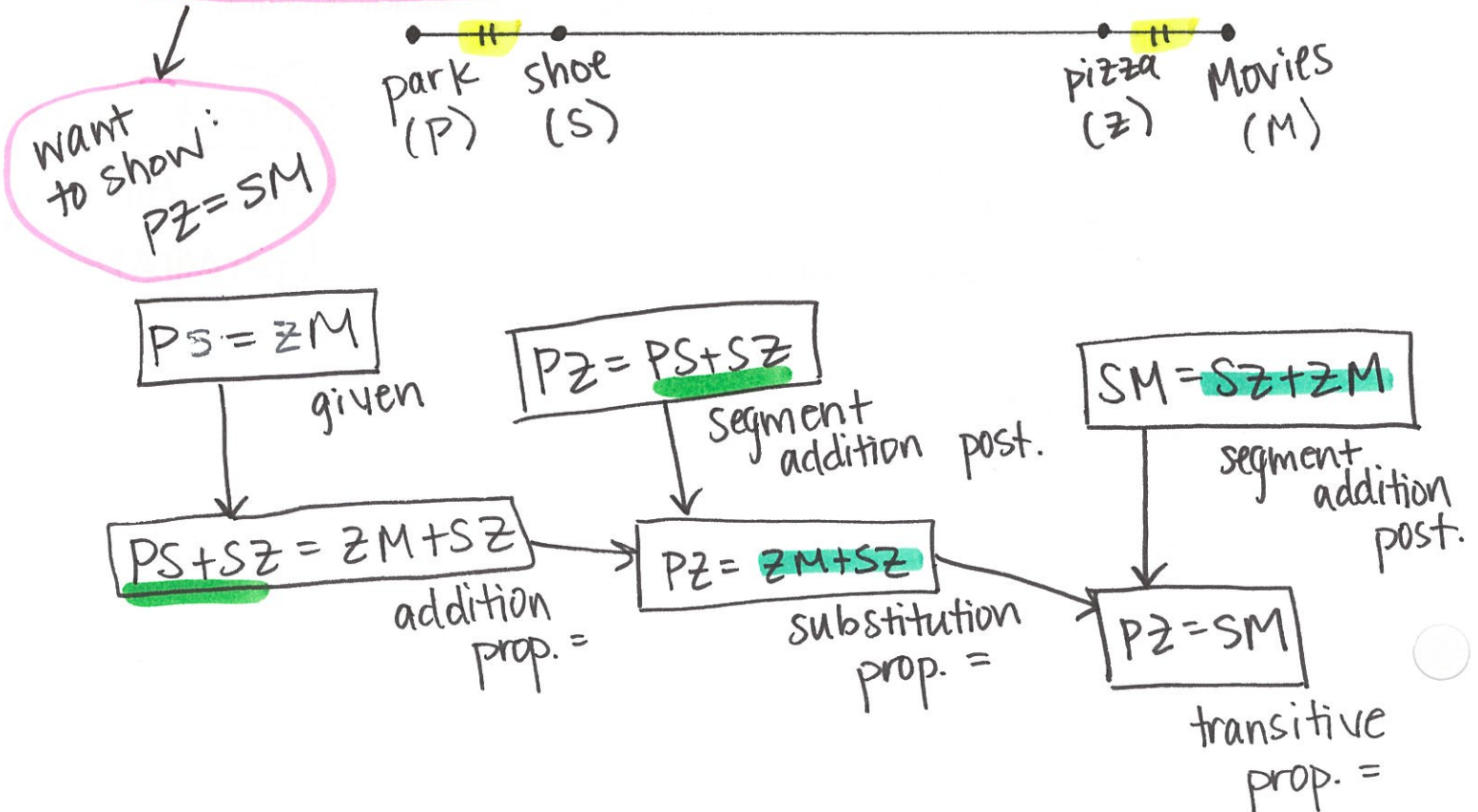
1. Solve $3x + 2 = 23 - 4x$ for x . Justify each step.Direct proofsTwo-column
paragraph
flow chart

2. You reflect the beam of a spotlight off a mirror lying flat on a stage, as shown. Determine whether $m\angle DBA = m\angle EBC$.

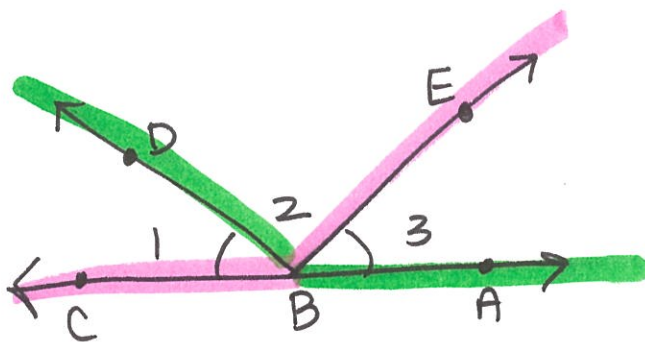


alternate proof next page

3. A park, a shoe store, a pizza shop, and a movie theater are located in order on a city street. The distance between the park and the shoe store is the same distance between the pizza shop and the movie theater. Show that the distance between the park and the pizza shop is the same as the distance between the shoe store and the movie theater.



alternate proof ex. #2 (P.3)



$$m\angle 1 + m\angle DBA = 180^\circ$$

angle addition post.

$$m\angle 3 + m\angle EBC = 180^\circ$$

angle addition post.

$$m\angle 1 + m\angle DBA = m\angle 3 + m\angle EBC$$

transitive prop. =

$$\angle 1 \cong \angle 3$$

given

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

$\cong \angle$'s are =

$$m\angle 1 + m\angle DBA = m\angle 1 + m\angle EBC$$

substitution prop. =

$$m\angle DBA = m\angle EBC$$

subtraction prop. =

alternate proof #3



$$PS + SM = PM$$

segment addition post.

$$PZ + ZM = PM$$

segment addition post.

$$PS + SM = PZ + ZM$$

transitive prop. =

$$PS = ZM$$

given

$$PS + SM = PZ + PS$$

substitution prop. =

$$SM = PZ$$

subtraction =