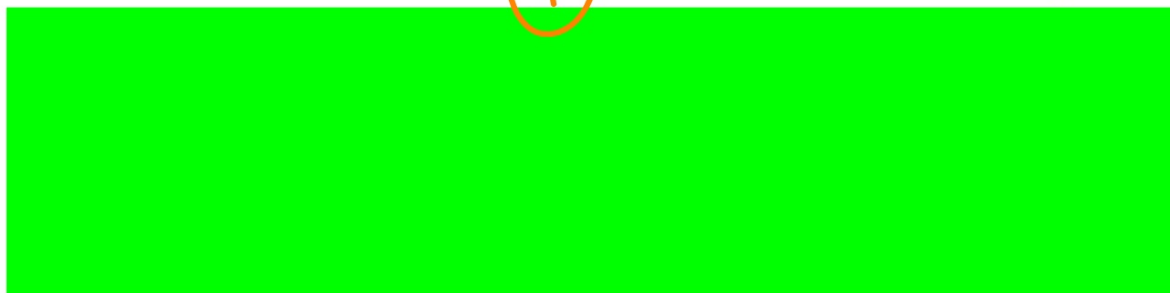| Property	
1. Addition Property of Equality	e. If $x - 14 = 17$, then $x = 31$
2. Subtraction Property of Equality	h. If $x + 3 = 15$, then $x = 12$
3. Multiplication Property of Equality	f. If $\frac{y}{3} = 12$, then $y = 36$
4. Division Property of Equality	g. If $3x = -45$, then $x = -15$
5. Distributive Property of Equality	b. $3(a + b) = 3a + 3b$
6. Substitution Property of Equality	a. If $m\angle A = 45°$, then $3(m\angle A) = 135°$
7. Reflexive Property of Equality	c. $m\angle B = m\angle B$
8. Symmetric Property of Equality	i. If $BC = RL$, then $RL = BC$
9. Transitive Property of Equality	d. If $x = y$ and $y = z$ then $x = z$

Statement
a. If $m\angle A = 45°$, then $3(m\angle A) = 135°$
b. $3(a + b) = 3a + 3b$
c. $m\angle B = m\angle B$
d. If $x = y$ and $y = z$ then $x = z$
e. If $x - 14 = 17$, then $x = 31$
f. If $\frac{y}{3} = 12$, then $y = 36$
g. If $3x = -45$, then $x = -15$
h. If $x + 3 = 15$, then $x = 12$
i. If $BC = RL$, then $RL = BC$

1. Complete the following table with the properties used to solve $4(x + 3) = 20$.

Statements	Reasons
① $4(x + 3) = 20$	① Given
② $4x + 12 = 20$	② Distributive Property
③ $4x = 8$	③ Subtraction Property
④ $x = 2$	④ Division Property

2. Complete the following table with the mathematical statements that correspond to the proofs used to solve $\frac{4(x-3)}{3} = 20$.

Reason

Statements	~~Proof~~ Reason
① $3 \left(\frac{4(x-3)}{3} = 20 \right) 3$	Given
② $4(x-3) = 60$	Multiplication Property of Equality
$4x - 12 = 60$	Distributive Property
$4x = 72$	Addition Property of Equality
$x = 18$	Division Property of Equality

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

[handwritten: midpoint]

Given $AC = AB + AB$ *[handwritten: 4 + 4, 8]*

Prove $AB = BC$

[handwritten diagram: segment A —4— B —4— C, with 8 underneath, midpoint labeled]

$AC = AB + AB$

[handwritten box: Given]

$AB + BC = AC$ → *[handwritten: 4 + 4   4 + 4]* $AB = AB = A + BC$ *[handwritten: = AB = AB]* → $AB = BC$

[handwritten: 4 = 4]

[handwritten boxes: Segment Add | Transitive | Subtraction]

[handwritten red: $AC = AB +$ $AB + BC = A$ (crossed out)]
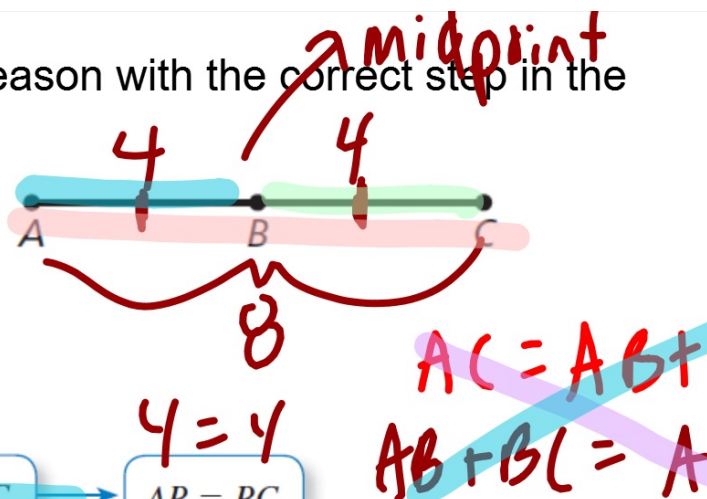
A. Segment Addition Postulate (Post. 1.2)   B. Given
C. Transitive Property of Equality   D. Subtraction Property of Equality

Answers: *[handwritten: B, A, C, D]*

1. Six steps of a two-column proof are shown. Copy and complete the proof.

Given T is the midpoint of $\overline{SU}$

Prove $x = 5$
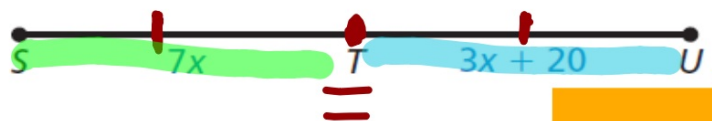
STATEMENTS	REASONS
1. T is the midpoint of $\overline{SU}$.	1. **Given**
2. $\overline{ST} \cong \overline{TU}$	2. Definition of midpoint
3. $ST = TU$	3. Definition of congruent segments
4. $7x = 3x + 20$	4. **Substitution Property**
5. $4x = 20$	5. Subtraction Property of Equality
6. $x = 5$	6. **Division Property**