

Write a reason for each step (Do not include substitution)

1. Solve: $3x - 12 = 7x + 8$

Statement	Reason
1. $3x - 12 = 7x + 8$	1. _____
2. $-4x - 12 = 8$	2. _____
3. $-4x = 20$	3. _____
4. $x = -5$	4. _____

2. Solve: $5(x - 1) = 4x + 13$

Statement	Reason
1. $5(x - 1) = 4x + 13$	1. _____
2. $5x - 5 = 4x + 13$	2. _____
3. $x - 5 = 13$	3. _____
4. $x = 18$	4. _____

Use the property to complete the statement

3. Substitution Property of Equality: If $AB = 20$. Then $AB + CD =$ _____

4. Symmetric Property of Equality: If $m\angle 1 = m\angle 2$, then _____

5. Addition Property of Equality: If $AB = CD$, then $AB + EF = CD + EF$

6. Distributive Property: If $5(x + 8) = 2$, then $5x + 40 = 2$

7. Transitive Property of Equality: If $m\angle 1 = m\angle 2$ and $m\angle 2 = m\angle 3$ then _____

Solve the equation. Write a reason for each step (include substitution).

8. $5x - 10 = -40$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

9. $\frac{n+5}{-14} = -1$

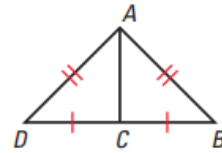
Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

10. $5(3x - 20) = -10$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____

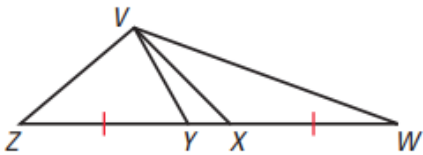
11. **Given:** $AD=AB$ and $DC=BC$

Prove: the perimeter of $\triangle ABC$ is equal to the perimeter of $\triangle ADC$.



Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

12. In the figure, $\overline{ZY} \cong \overline{XW}$, $ZX = 5x + 17$, $YW = 10 - 2x$ and $YX = 3$. Find ZY and XW .



13. A flashlight beam is reflected off a mirror lying flat on the ground. Use the information given to find $m\angle 2$.

$$m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$$

$$m\angle 1 + m\angle 2 = 148^\circ$$

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

