

Practice

**Integration: Algebra
Using Proof in Algebra****Name the property of equality that justifies each statement.**

1. If $m\angle A = m\angle B$, then $m\angle B = m\angle A$.
2. If $x + 3 = 17$, then $x = 14$.
3. $xy = xy$
4. If $7x = 42$, then $x = 6$.
5. If $XY - YZ = XM$, then $XM + YZ = XY$.
6. $2(x + 4) = 2x + 8$.
7. If $m\angle A + m\angle B = 90$, and $m\angle A = 30$, then $30 + m\angle B = 90$.
8. If $x = y + 3$ and $y + 3 = 10$, then $x = 10$.

Complete each proof by naming the property that justifies each statement.

9. Prove that if $2(x - 3) = 8$, then $x = 7$.

Given: $2(x - 3) = 8$ **Prove:** $x = 7$ **Proof:**

Statements	Reasons
a. $2(x - 3) = 8$	a. _____
b. $2x - 6 = 8$	b. _____
c. $2x = 14$	c. _____
d. $x = 7$	d. _____

10. Prove that if $3x - 4 = \frac{1}{2}x + 6$, then $x = 4$.

Given: $3x - 4 = \frac{1}{2}x + 6$ **Prove:** $x = 4$ **Proof:**

Statements	Reasons
a. $3x - 4 = \frac{1}{2}x + 6$	a. _____
b. $\frac{5}{2}x - 4 = 6$	b. _____
c. $\frac{5}{2}x = 10$	c. _____
d. $x = 4$	d. _____