2-6 Practice
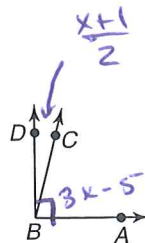
Algebraic Proof

PROOF Write a two-column proof.

1. If $m\angle ABC + m\angle CBD = 90$, $m\angle ABC = 3x - 5$,
and $m\angle CBD = \dfrac{x + 1}{2}$, then $x = 27$.

Statements	Reasons
1. $m\angle ABC + \angle CBD = 90$ $m\angle ABC = (3x-5)$ $m\angle CBD = \dfrac{x+1}{2}$	1. Given
2. $3x-5 + \dfrac{x+1}{2} = 90$	2. Substitution
3. $2\left(3x-5+\dfrac{x+1}{2}\right) = 90 \cdot 2$	3. Multiplication
4. $6x(-10) + x(1) = 180$	4. Substitution
5. $7x - 9 = 180$	5. Substitution
6. $7x-9+9 = 180+9$	6. Addition
7. $7x = 189$	7. Substitution
8. $\dfrac{7}{7}x = \dfrac{189}{7}$	8. Division
9. $x = 27$	9. Substitution

2. **FINANCE** The formula for simple interest is $I = prt$, where I is interest, p is principal, r is rate, and t is time. Solve the formula for r and justify each step.

Statements	Reasons
1.) $I = prt$	1.) Given
2.) $\dfrac{I}{pt} = \dfrac{prt}{pt}$	2.) Division
3.) $\dfrac{I}{pt} = r$	3.) Substitution
4.) $r = \dfrac{I}{pt}$	4.) Symmetric