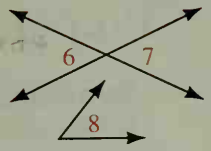
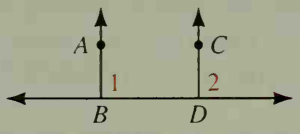
10. State the theorem that justifies the statement $\angle 6 \cong \angle 7$.

11. Suppose you have already stated that $\angle 6 \cong \angle 7$ and $\angle 7 \cong \angle 8$. What property of congruence justifies the conclusion that $\angle 6 \cong \angle 8$?



12. Write a proof in two-column form.
Given: $\overrightarrow{DC} \perp \overleftrightarrow{BD}$; $\angle 1 \cong \angle 2$
Prove: $\overrightarrow{BA} \perp \overleftrightarrow{BD}$



Algebra Review: *Systems of Equations*

Solve each system of equations by the substitution method.

Example 1 (1) $y = 5 - 2x$
(2) $5x - 6y = 21$

Solution Substitute $5 - 2x$ for y in (2): $5x - 6(5 - 2x) = 21$
$17x - 30 = 21$; $x = 3$

Substitute 3 for x in (1): $y = 5 - 2(3) = -1$

The solution is $x = 3$, $y = -1$.

1. $y = 3x$
$5x + y = 24$

2. $y = 2x + 5$
$3x - y = 4$

3. $x = 8 + 3y$
$2x - 5y = 8$

4. $3x + 2y = 71$
$y = 4 + 2x$

5. $4x - 5y = 92$
$x = 7y$

6. $y = 3x + 8$
$x = y$

7. $8x + 3y = 26$
$2x = y - 4$

8. $x - 7y = 13$
$3x - 5y = 23$

9. $3x + y = 19$
$2x - 5y = -10$

Solve each system by the method of addition or subtraction.

Example 2 (1) $3x - y = 13$
(2) $4x + y = 22$

Solution Add (1) and (2):
$7x = 35$; $x = 5$

Substitute 5 for x in (2):
$4(5) + y = 22$; $y = 2$

The solution is $x = 5$, $y = 2$.

Example 3 (1) $6x + 15y = 90$
(2) $6x - 14y = 32$

Solution Subtract (2) from (1):
$29y = 58$; $y = 2$

Substitute 2 for y in (1):
$6x + 15(2) = 90$; $x = 10$

The solution is $x = 10$, $y = 2$.

10. $5x - y = 20$
$3x + y = 12$

11. $x + 3y = 7$
$x + 2y = 4$

12. $3x - 2y = 11$
$3x - y = 7$

13. $7x + y = 29$
$5x + y = 21$

14. $8x - y = 17$
$6x + y = 11$

15. $9x - 2y = 50$
$6x - 2y = 32$

16. $7y = 2x + 35$
$3y = 2x + 15$

17. $2y = 3x - 1$
$2y = x + 21$

18. $19 = 5x + 2y$
$1 = 3x - 4y$