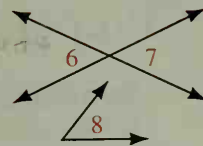


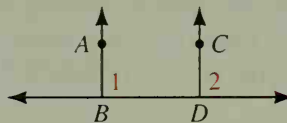
10. State the theorem that justifies the statement $\angle 6 \cong \angle 7$.
11. Suppose you have already stated that $\angle 6 \cong \angle 7$ and $\angle 7 \cong \angle 8$. What property of congruence justifies the conclusion that $\angle 6 \cong \angle 8$?



12. Write a proof in two-column form.

Given: $\overrightarrow{DC} \perp \overrightarrow{BD}$; $\angle 1 \cong \angle 2$

Prove: $\overrightarrow{BA} \perp \overrightarrow{BD}$



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