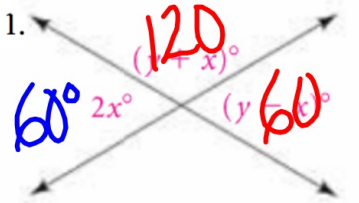
Algebra **Find the value of each variable and the measure of each labeled angle.**

1.



$6X = 180$

$X = 30$

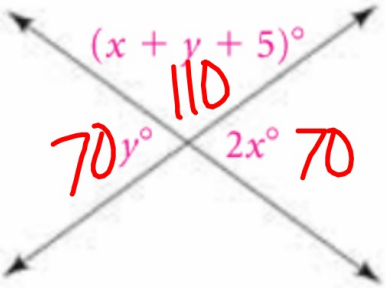
$2X = Y - X$

$+X \quad +X$

$3X = Y = 90$

$2X + Y + X = 180$

2.



$Y + X + Y + 5 = 180$

$2X + X + 2X + 5 = 180$

$5X + 5 = 180$

$5X = 175$

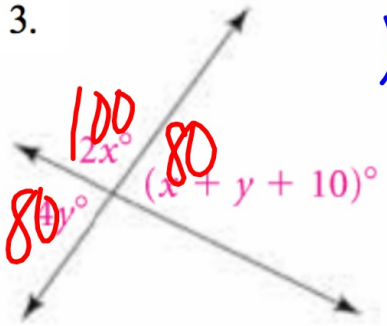
$X = 35$

$Y = 2X$

$Y = 2(35)$

$= 70$

3.



$x+y+10=4y$

$-y \quad -y$

$\frac{x+10=3y}{3 \quad 3}$

$\frac{x+10}{3} = y$

$4\left(\frac{x+10}{3}\right)+2x=180$

$3\left(\frac{4x+40}{3}+2x\right)=(180)3$

$4x+40+6x=540$

$10x+40=500$

$10x=500$

$1x=50$

$20=\frac{50+10}{3}$

Use the given property to complete each statement.

4. Subtraction Property of Equality
If $3x + 7 = 19$, then $3x =$ 12

5. Reflexive Property of Congruence
$\overline{AB} \cong$ AB

6. Substitution Property
If $MN = 3$ and $MN + NP = 15$, then $3+NP=15$

7. **Each conditional statement below is true. Write its converse. If the converse is also true, combine the statements as a biconditional.**

a. If $y + 7 = 32$, then $y = 25$.

b. If you live in Australia, then you live south of the equator.

c. If $n > 0$, then $n^2 > 0$.

b. If you live south of the eq. then you live in Aust.

c. If $n^2 > 0$, then $n > 0$.

7a.) If $y = 25$, then $y + 7 = 32$

$y + 7 = 32$ iff $y = 25$