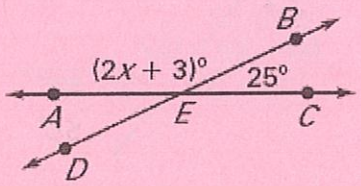
Geometry
Chapter 2 – Algebra Review Problems

Name: Key
Date: _____ Period: _____

Find the value of the variable. Justify your initial equation with a theorem, postulate, or definition.

1.



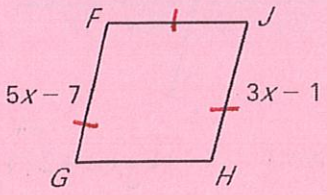
$2x+3+25=180$ (Linear Pair Postulate)

$2x+28=180$

$2x=152$

$x=76$

2. $\overline{FG} \cong \overline{FJ}$ and $\overline{FJ} \cong \overline{JH}$

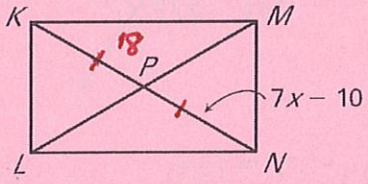


$5x-7=3x-1$ (Transitive)

$2x=6$

$x=3$

3. P is the midpoint of $\overline{KN}$, and $KP = 18$

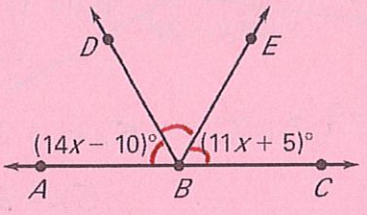


$7x-10=18$ (Def^n of Midpoint)

$7x=28$

$x=4$

4. $\angle ABD \cong \angle DBE$, $\angle EBC \cong \angle DBE$



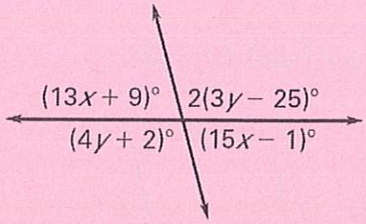
$14x-10=11x+5$ (Transitive)

$3x=15$

$x=5$

Find the value of each variable AND the measure of each angle.

5.



$13x+9 = 15x-1$

$10 = 2x$

$x = 5$

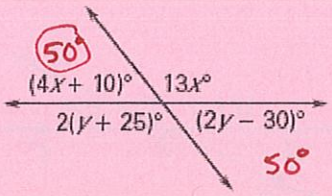
$4y+2 = 2(3y-25)$

$4y+2 = 6y-50$

$52 = 2y$

$y = 26$

6.



$4x+10+13x = 180$

$17x+10 = 180$

$17x = 170$

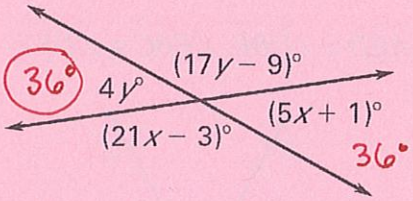
$x = 10$

$2y-30 = 50$

$2y = 80$

$y = 40$

7.



$4y+17y-9 = 180$

$21y-9 = 180$

$21y = 189$

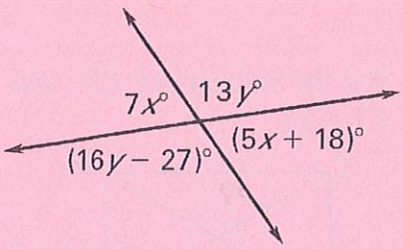
$y = 9$

$5x+1 = 36$

$5x = 35$

$x = 7$

8.



$16y-27 = 13y$

$3y = 27$

$y = 9$

$7x = 5x+18$

$2x = 18$

$x = 9$