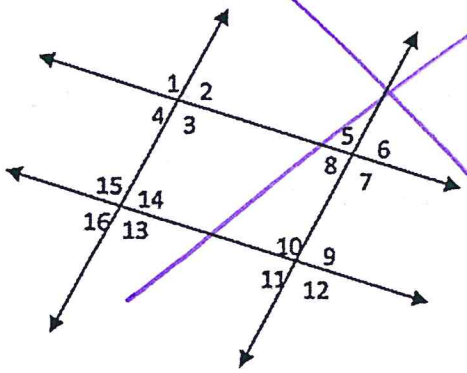
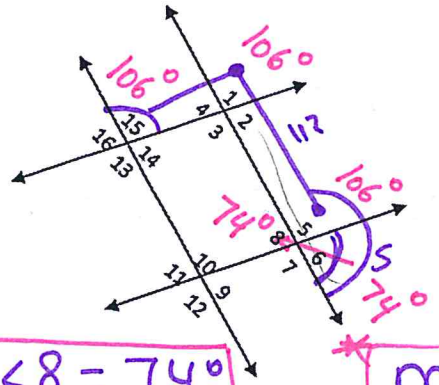
lines cut by a transversal practice

Name: Key

1) If m<3= 5x+6 and m<9=-x-2; Find the value for x; find m<3 and m<12



2) If m<15= 3x+7 and m<6=2x+8; Find the value for x; find m<15 and m<8



$3x+7+2x+8=180^\circ$

$5x+15=180^\circ$

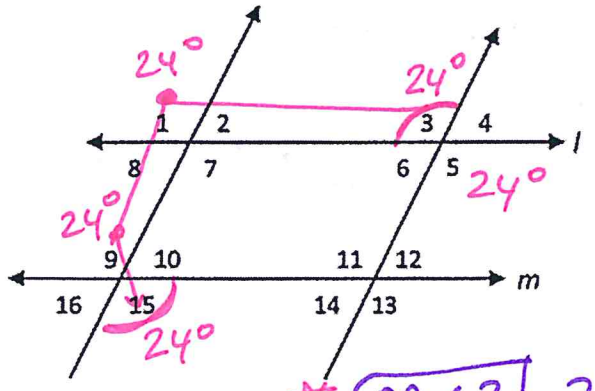
$-15 \quad -15$

$\frac{5x}{5}=\frac{165}{5}$ $\quad x=33$

$m\angle 8 = 74^\circ$

$m\angle 15 = 3(33)+7 = 106^\circ$

3) If m<3=2x+16 and m<15= 7x-4. Find the value for x; find m<3 and m<13



$2x+16=7x-4$

$-2x \quad -2x$

$16=5x-4$

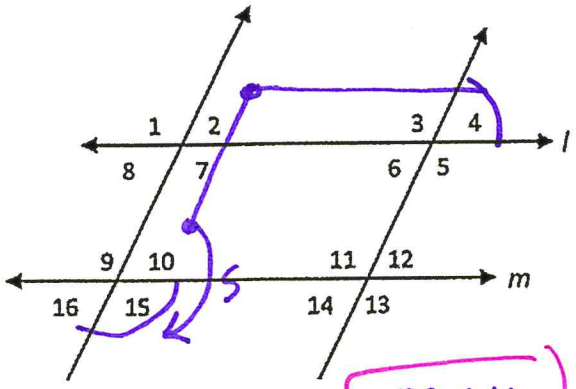
$+4 \quad +4$

$\frac{20}{5}=\frac{5x}{5}$ $\quad x=4$

$m\angle 3 = 2(4)+16 = 24^\circ$

$m\angle 3 \cong m\angle 15 = 24^\circ = m\angle 13$

4) If m<4=8x-80 and m< 15=-2x+116. Find the value for x; find m<4 and m<16



$8x - 80 - 2x + 116 = 180°$

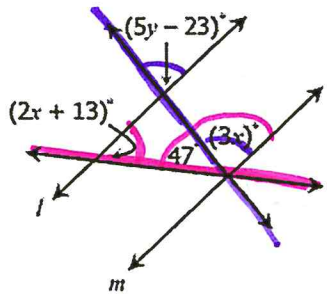
$6x + 36 = 180°$

$\frac{6x}{6} = \frac{144}{6}$ $x = 24$

$m<4 = 8(24) - 80 = 112°$

$m<16 = 112°$

5)



$2x + 13 + 47 + 3x = 180°$

$5x + 60 = 180°$

$-60 \quad -60$

$\frac{5x}{5} = \frac{120}{5}$ $x = 24$

$x = 24$

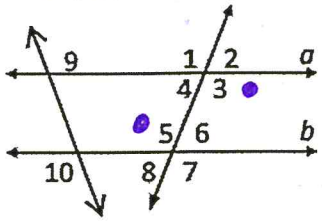
$y = 19$

$3(24) = 5y - 23$ Corresponding Angles

$72 = 5y - 23$ $y = 19$

6)

Given : $\angle 10 \cong \angle 9$;
$m\angle 5 = (5x + 4)°$,
$m\angle 3 = (6x - 16)°$
Prove: $x = 20$



$5x + 4 = 6x - 16$ Alt. int

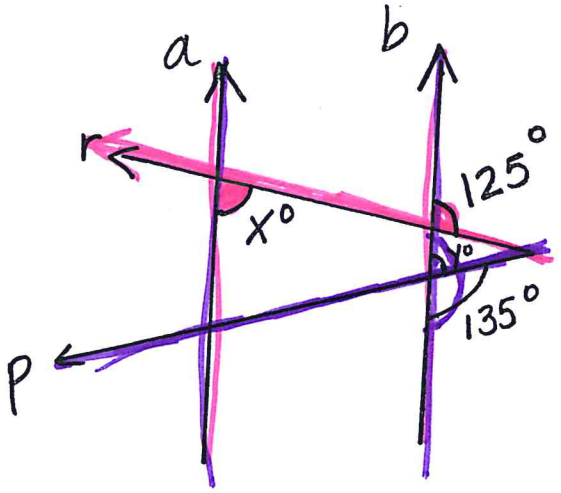
$-5x \quad -5x$

$4 = x - 16$

$+16 \quad +16$

$x = 20$ proven ✓

7)



Find x and y

$x + 125 = 180°$

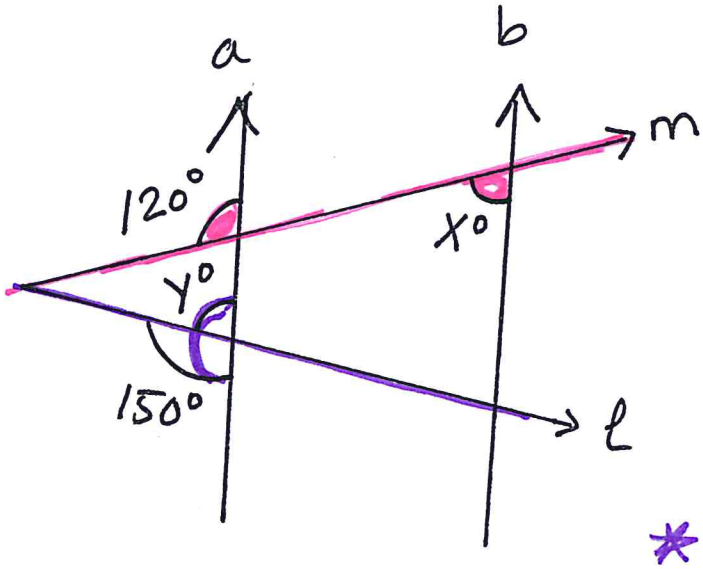
$x = 55°$

$y + 135 = 180°$

$-135 \quad -135°$

$y = 45°$

8)



Find x and y

$x + 120 = 180°$

$-120 \quad -120$

$x = 60°$

$y + 150 = 180°$

$-150 \quad -150$

$y = 30°$