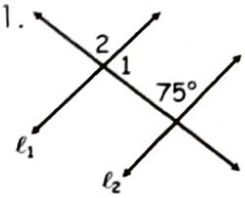
Name: Key Date: _____

Parallel Lines and Transversals Practice

In problems 1 – 4, assume that $\ell_1 \| \ell_2$. Find the measures of ∠1 and ∠2.

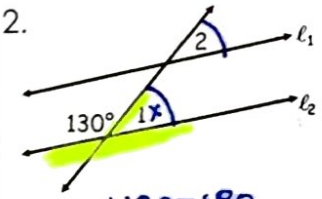
1.



m∠1 = 105° same side interior

m∠2 = 75° corresponding

2.

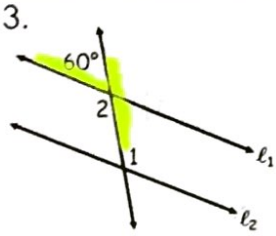


m∠1 = 50° linear pair

m∠2 = 50° corresponding

x + 130 = 180
−130 −130
x = 50

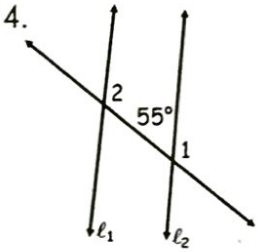
3.



m∠2 = 120° linear pair

m∠1 = 120° alt. int. ∠s

4.



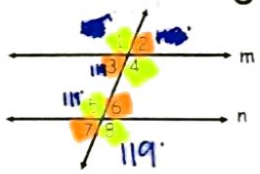
m∠1 = 125° linear pair

m∠2 = 125° corresponding ∠s

5. Given $m \| n$ and m∠8 = 119°, find the measures of all the numbered angles in the figure.

m∠1 = 119°, m∠2 61°, m∠3 = 61°

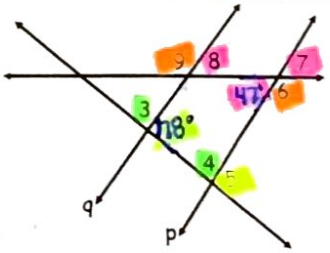
m∠4 = 119°, m∠5 = 119°, m∠6 = 61°, m∠7 = 61°



6. Given $p \| q$, m∠1 = 78°, and m∠2 = 47°, find the measures of all the numbered angles.

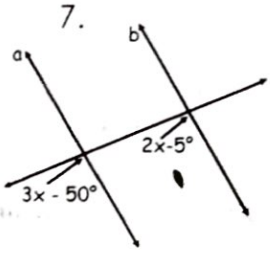
m∠3 = 102°, m∠4 = 102°, m∠5 = 78°, m∠6 = 133°

m∠7 = 47°, m∠8 = 47°, m∠9 = 133°



In problems 7 – 10, assume $a \| b$. Find the value of x.

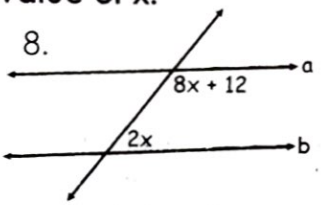
7.



$3x-50=2x-5$
$-2x \quad -2x$
$x-50=-5$
$+50 \quad +50$
$x=45$

corr. ∠s

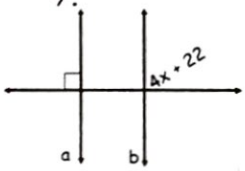
8.



same side interior

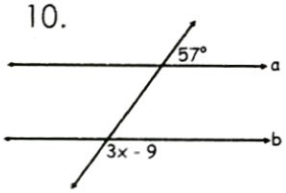
$2x+8x+12=180$
$10x+12=180$
$10x=168$
$x=16.8$

9.



$4x+22=90$
$4x=68$
$x=17$

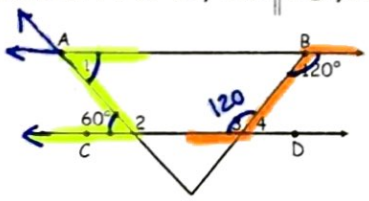
10.



$3x-9+57=180$
$3x+48=180$
$3x=132$
$x=44$

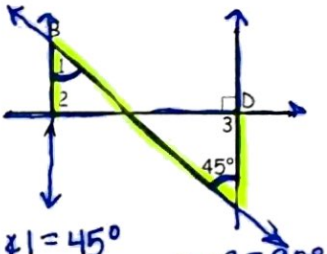
In problems 11 & 12, $\overline{AB} \| \overline{CD}$, find the measure of each numbered angle.

11.



$m\angle 1 = 60°$ $m\angle 3 = 120°$
$m\angle 2 = 120°$ $m\angle 4 = 60°$

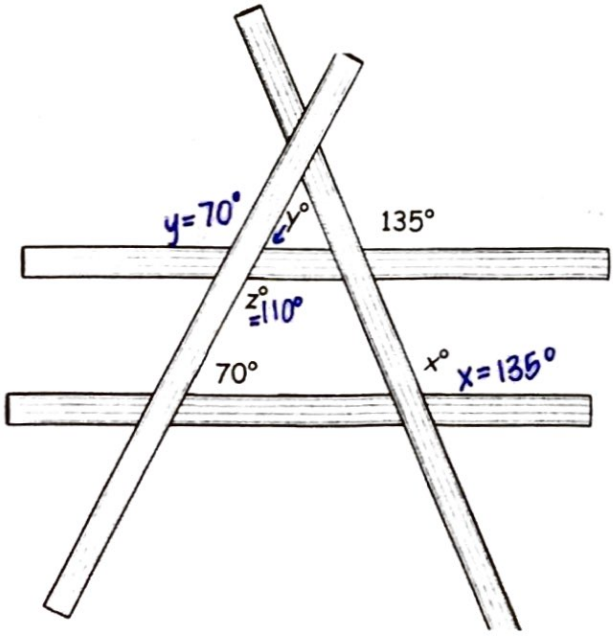
12.



$m\angle 1 = 45°$ $m\angle 3 = 90°$
$m\angle 2 = 90°$

Jane and Opal were playing around with straws after lunch. They made the designs below with parallel straws. Find the missing variables.

13. Jane's Design:



14. Opal's Design: