

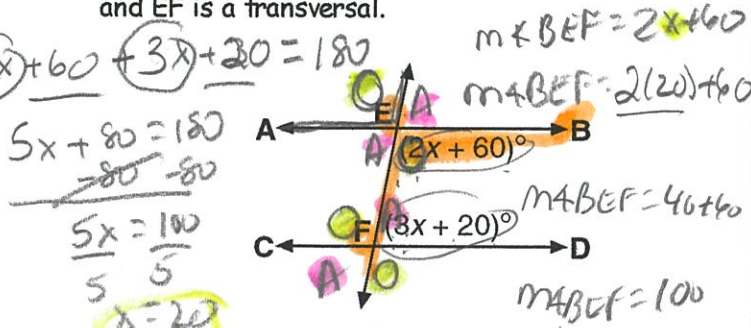
Name: Key
Mrs. Roubos

Date: _____
8R Period _____

Classwork

$A = A$
 $\theta = \theta$
 $A + \theta = 180$

- 1) In the accompanying diagram, \overline{AB} is parallel to \overline{CD} , and \overline{EF} is a transversal.



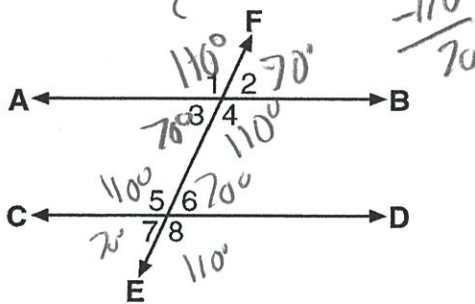
If $m\angle BEF = (2x + 60)^\circ$ and $m\angle DFE = (3x + 20)^\circ$, what is $m\angle BEF$?

- A) 40°
B) 140°

- C) 20°
D) 100°

Consecutive
+8

- 2) In the accompanying diagram, $\overline{AB} \parallel \overline{CD}$, \overline{EF} is transversal, and $m\angle 1 = 110^\circ$.



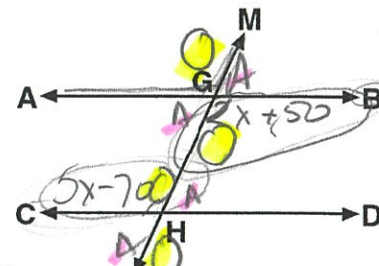
What is $m\angle 7$?

- A) 110°
B) 50°

- C) 20°
D) 70°

- 3) In the diagram below, $\overline{AB} \parallel \overline{CD}$ and each is intersected by \overline{MN} at G and H , respectively. If $m\angle BGH = (2x + 50)^\circ$ and $m\angle CHG = (5x - 70)^\circ$, find x .

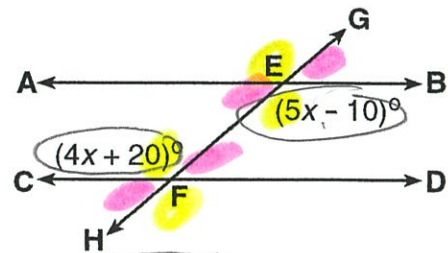
Alternate
interior
 \cong



$2x + 50 = 5x - 70$
 $-2x \quad -2x$
 $50 = 3x - 70$
 $+70 \quad +70$
 $120 = 3x$
 $\frac{120}{3} = \frac{3x}{3}$
 $x = 40$

- 4) In the accompanying diagram, parallel lines \overline{AB} and \overline{CD} are intersected by \overline{GH} at E and F , respectively. If $m\angle BEF = (5x - 10)^\circ$ and $m\angle CFE = (4x + 20)^\circ$, find x .

Alternate interior
 \cong



$4x + 20 = 5x - 10$
 $-4x \quad -4x$
 $20 = 1x - 10$
 $+10 \quad +10$
 $30 = 1x$
 $x = 30$

- 5) In the accompanying diagram, parallel lines \overline{HE} and \overline{AD} are cut by transversal \overline{BF} at points G and C , respectively. If $m\angle HGF = (5n)^\circ$ and $m\angle BCD = (2n + 66)^\circ$, find n .

Alternate Exterior =

$$2n + 66 = 5n$$

$$\begin{array}{r} 2n + 66 = 5n \\ -2n \quad -2n \\ \hline 66 = 3n \\ \frac{66}{3} = \frac{3n}{3} \\ n = 22 \end{array}$$

$n = 22$

- 6) In the accompanying diagram, parallel lines \overline{AB} and \overline{CD} are intersected by transversal \overline{EF} at G and H , respectively. If $m\angle AGH = (4x + 30)^\circ$ and $m\angle GHD = (7x - 9)^\circ$, what is the value of x ?

Alternate Interior =

$$4x + 30 = 7x - 9$$

$$\begin{array}{r} 4x + 30 = 7x - 9 \\ -4x \quad -4x \\ \hline 30 = 3x - 9 \\ +9 \quad +9 \\ \hline 39 = 3x \\ \frac{39}{3} = \frac{3x}{3} \\ x = 13 \end{array}$$

$x = 13$

- 7) Solve for x in the diagram below.

Complementary +50

$$(7x + 5) + (9x + 5) = 90$$

$$\begin{array}{r} 7x + 5 + 9x + 5 = 90 \\ 16x + 10 = 90 \\ -10 \quad -10 \\ \hline 16x = 80 \\ \frac{16x}{16} = \frac{80}{16} \\ x = 5 \end{array}$$

$x = 5$

- 8) In the accompanying figure, $\overline{AB} \parallel \overline{CD}$ and \overline{EH} is a transversal intersection \overline{AB} at F and \overline{CD} at G . If $m\angle AFG = (3x + 15)^\circ$ and $m\angle FGD = (5x - 5)^\circ$, find x .

Alternate Interior =

$$3x + 15 = 5x - 5$$

$$\begin{array}{r} 3x + 15 = 5x - 5 \\ -3x \quad -3x \\ \hline 15 = 2x - 5 \\ +5 \quad +5 \\ \hline 20 = 2x \\ \frac{20}{2} = \frac{2x}{2} \\ x = 10 \end{array}$$

$x = 10$

- 9) In the accompanying diagram, \overline{AB} is parallel to \overline{CD} , and transversal \overline{EH} intersects \overline{AB} and \overline{CD} at F and G , respectively. If $m\angle AFG = (2x + 10)^\circ$ and $m\angle FGD = (x + 20)^\circ$, find the value of x .

Alternate Interior =

$$2x + 10 = x + 20$$

$$\begin{array}{r} 2x + 10 = x + 20 \\ -x \quad -x \\ \hline x + 10 = 20 \\ -10 \quad -10 \\ \hline x = 10 \end{array}$$

$x = 10$

- 10) In the accompanying diagram, \overline{AB} and \overline{CD} intersect at E . If $m\angle AED = (9x + 10)^\circ$ and $m\angle BEC = (2x + 52)^\circ$, find the value of x .

Vertical Angles =

$$9x + 10 = 2x + 52$$

$$\begin{array}{r} 9x + 10 = 2x + 52 \\ -2x \quad -2x \\ \hline 7x + 10 = 52 \\ -10 \quad -10 \\ \hline 7x = 42 \\ \frac{7x}{7} = \frac{42}{7} \\ x = 6 \end{array}$$

$x = 6$