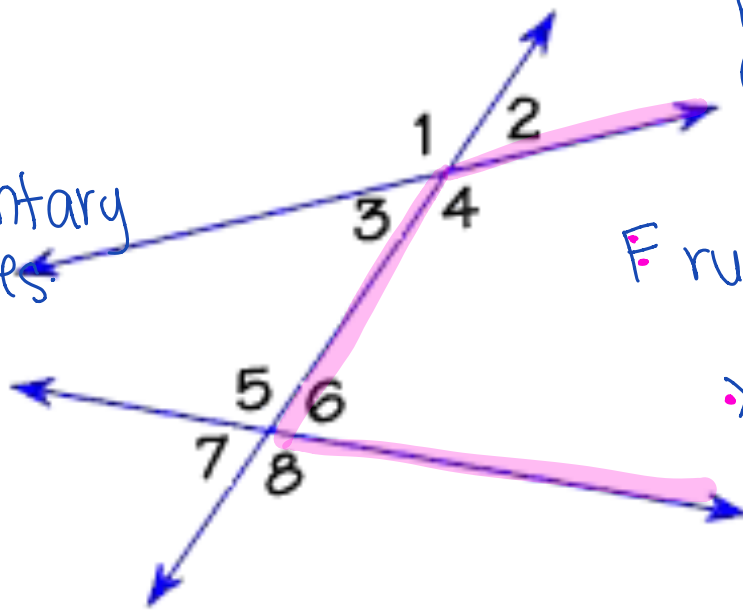Name: _____   Date: _____

I Spy!! Try to find the hidden letters made by the lines in the diagram.

I

C

F

H supplementary angles.

Z

✗

X

✓

1   2
3   4

5   6
7   8

Z rule – alternate interior angles

C rule – interior angles

F rule – corresponding angles.

X rule – vertically opposite angles

**Z. rule – alternate
interior
angles are equal.**

E

**C rule – interior
angles are
supplementary**

**F rule – corresponding
angles.
are equal.**

**X· rule – vertically
opposite
angles
are
equal.**

f
g
e
h

b
a c
d
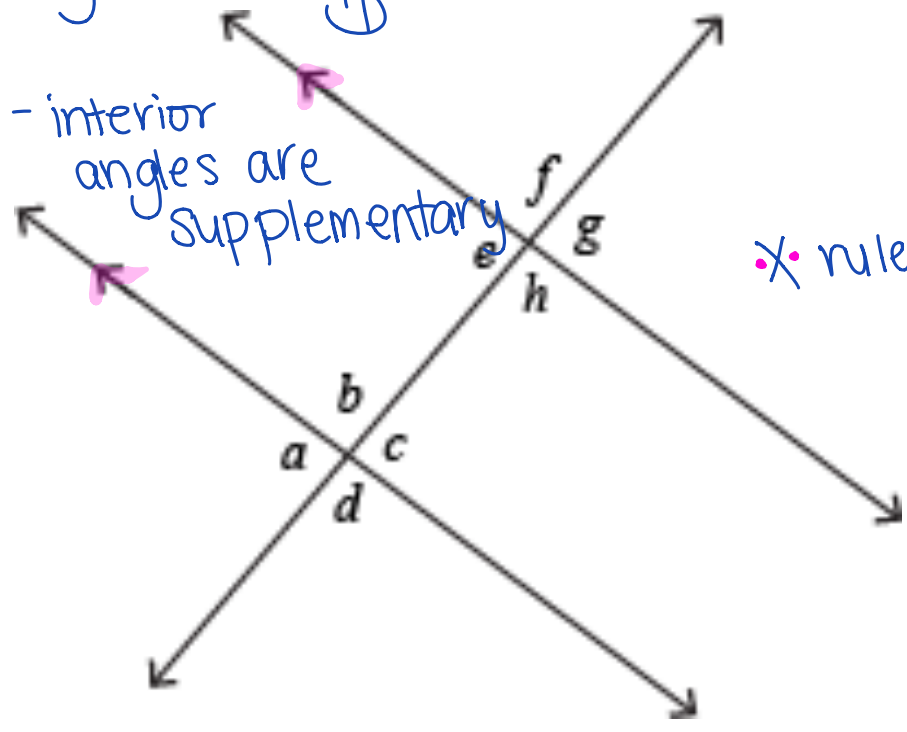
If this is true,	Then ALL of these must also be true.
The two lines are parallel, then	alternate interior angles will be equal.
	interior angles will be supplementary
	corresponding angles will be equal
	alternate exterior angles will be equal.

| If ANY of these are true,	Then this must be true.
The corresponding angles are equal, then	
The alternate interior angles are equal, then	the lines must be parallel.
The alternate exterior angles are equal, then	
The co-interior angles are supplementary, then	

Example Determine the measure of $\angle BDE$. **Justify your solution.**

$\angle FBD = 114°$ vertically opposite.

$\angle CBD = 180 - 114 = 66°$ supplementary angles

$\angle BDE = 66°$ alternate interior.
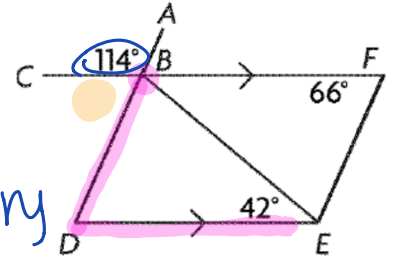
Example Are BD and FE parallel? **Prove you are correct?**

$\angle CBD = 180 - 125$ supplementary
$\qquad = 55°$

no because corresponding angles are equal if the lines are parallel.
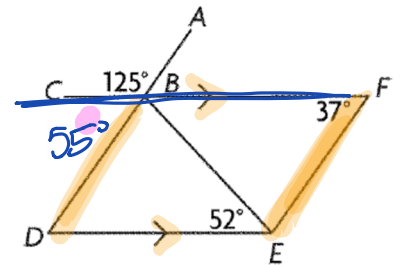
Example Determine the values of x and y. **Show your work.**
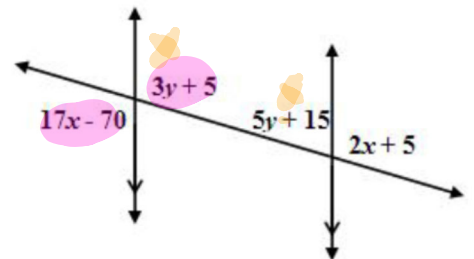
Vertically opposite angles.

$17x - 70 = 3y + 5$

Interior angles

$(3y + 5) + (5y + 15) = 180$

$8y + 20 = 180$
$\qquad -20 \qquad -20$

$8y = 160$

$17x - 70 = 3(20) + 5$
$\qquad\qquad = 60 + 5$

$17x - 70 = 65$
$\qquad +70 \qquad +70$

P.7.2
#1-5

$$y = 20$$

$$\frac{11x}{17} \quad \frac{138}{17}$$

$$x \doteq 7.9$$