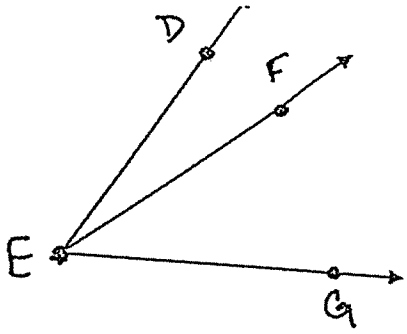
me: Key

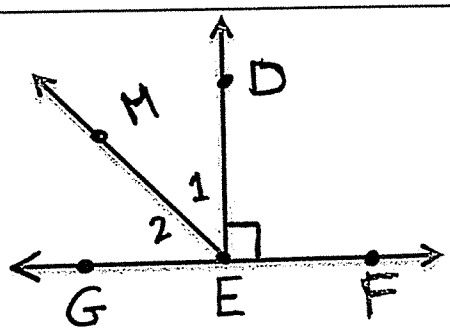
Practice Monday 10/21/19

- Angle Bisector



$\overline{EF}$ bisects $\angle DEG$. (The diagram is not drawn to scale.)

1. If $m\angle DEG = 88^\circ$, find $m\angle FEG =$ 44°
2. If $m\angle FED = 27^\circ$, find $m\angle GED =$ 54°



$\overline{EF}$ bisects $\angle DEG$

Complete the below statements:

m<1= 45°

<1 ≅ <2

<DEG ≅ DEF

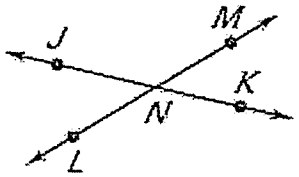
m< MEF= 90°+45° = 135°

:. Vertical Angles

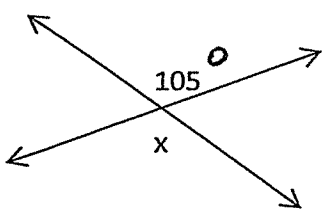
me the two pair of vertical angles.

<J NM, <L NK

JNL, <MNK

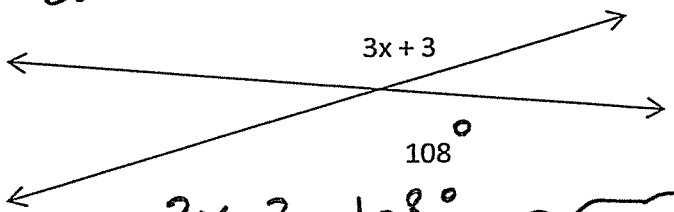


d the value of x in degrees in each diagram below. Show your thinking.



X = 105°

b.



3x+3 = 108°

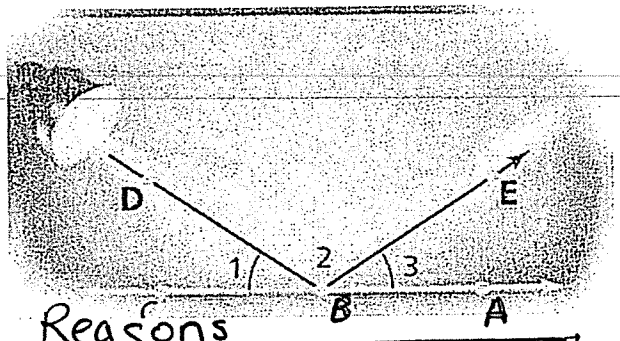
$\frac{3x}{3} = \frac{105}{3}$

X = 35°

III. Proofs

1) Given: $m\angle 1 = m\angle 3$

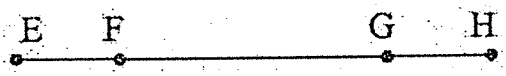
Prove: $m\angle DBA = m\angle EBC$



Statements	Reasons
1. $m\angle 1 = m\angle 3$	Given
2. $m\angle DBA = m\angle 3 + m\angle 2$	Angle Addition postulate
3. $m\angle DBA = m\angle 1 + m\angle 2$	Substitution property
4. $m\angle 1 + m\angle 2 = m\angle EBC$	Angle Addition postulate
5. $m\angle DBA = m\angle EBC$	Substitution / Transitive .

2) Given: $\overline{EF} \cong \overline{GH}$

Prove: $\overline{EG} \cong \overline{FH}$



Statements	Reasons
1. $\overline{EF} \cong \overline{GH}$	1. Given
2. EF = GH	2. Definition for Congruent
3. EF + FG = GH + FG	3. Addition property
4. EF + FG = EG; GH + FG = FH	4. Segment Addition
5. EG = FH	5. Substitution
6. $\overline{EG} \cong \overline{FH}$	6. Definition of Congruence

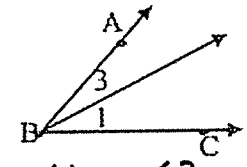
ame: Key

Practice Tuesday 10/22/19

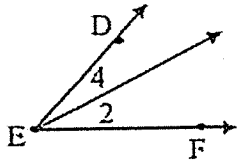
Given: AC = BD
Prove: AB = CD

1. AC = BD	1. Given.
2. AC = AB + BC BD = BC + CD	2. Segment Addition postulate.
3. AB + BC = BC + CD	3. Substitution.
4. AB = CD	4. Subtraction property.

Given: m∠1 = m∠2; m∠3 = m∠4
Prove: m∠ABC = m∠DEF



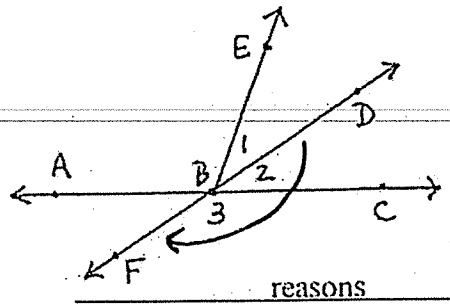
m<1 + m<3



1. m∠1 = m∠2; m∠3 = m∠4	1. Given
2. m∠1 + m∠3 = m∠2 + m∠4	2. Substitution
3. m∠1 + m<3 = m∠ABC m∠2 + m∠4 = m∠DEF	3. ~~Segment~~ Angle Addition postulate
4. m∠ABC = m∠DEF	4. Substitution

Given: $\overrightarrow{BD}$ bisects <EBC

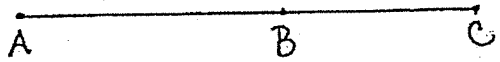
Prove: <1 and <3 are supplementary



statements	reasons
1. $\overrightarrow{BD}$ bisects <EBC	1. Given
2. <1 ≅ <2	2. by the bisection.
3. <2 and <3 form a linear pair	3. Linear pair theorem
4. m<2 + m<3 = 180	4. Supplementary angles
5. m<1 = m<2	5. by the bisection.
6. m<1 + m<3 = 180	6. Substitution
7. <1 and <3 are supplementary	7. Supplementary def.

Given: AB = 9, BC = 7 and AB + BC = AC

Prove: 16 = AC



statements	reasons
1. AB = 9, BC = 7	1. Given
2. AB + BC = AC	2. Segment Addition postulate
3. 9 + 7 = AC	3. Substitution
4. 16 = AC	4. Simplify.