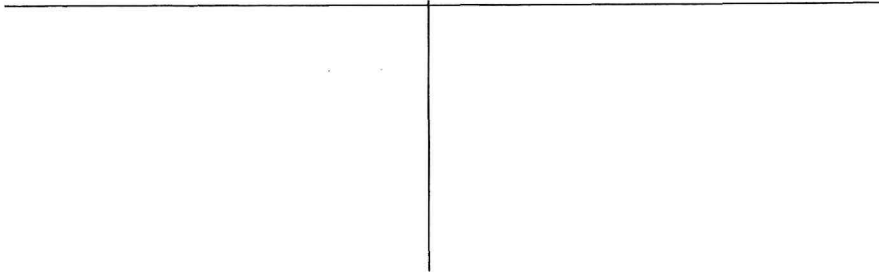


GEOMETRY WORKSHEET---BEGINNING PROOFS

I Given: $\frac{2x-9}{5} = 1$

Prove: $x = 7$

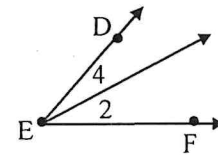
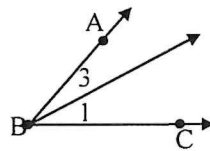


II. Given: $AC = BD$
 Prove: $AB = CD$

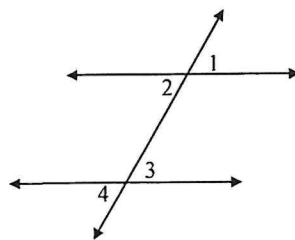


- | | |
|-------------------------------------|----|
| 1. $AC = BD$ | 1. |
| 2. $AC = AB + BC$
$BD = BC + CD$ | 2. |
| 3. $AB + BC = BC + CD$ | 3. |
| 4. $AB = CD$ | 4. |

III. Given: $m\angle 1 = m\angle 2$; $m\angle 3 = m\angle 4$
 Prove: $m\angle ABC = m\angle DEF$



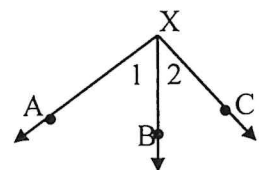
- | | |
|---|----|
| 1. $m\angle 1 = m\angle 2$; $m\angle 3 = m\angle 4$ | 1. |
| 2. $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$ | 2. |
| 3. $m\angle 1 + m\angle 3 = m\angle ABC$
$m\angle 2 + m\angle 4 = m\angle DEF$ | 3. |
| 4. $m\angle ABC = m\angle DEF$ | 4. |



IV. Given: $\angle 2 \cong \angle 3$
 Prove: $\angle 1 \cong \angle 4$

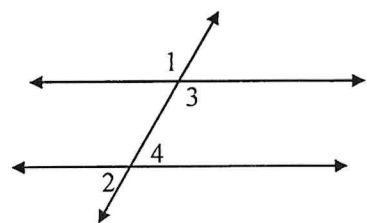
-
- | | |
|------------------------------|----|
| 1. $\angle 1 \cong \angle 2$ | 1. |
| 2. $\angle 2 \cong \angle 3$ | 2. |
| 3. $\angle 3 \cong \angle 4$ | 3. |
| 4. $\angle 1 \cong \angle 4$ | 4. |

V. Given: $\angle 1$ and $\angle 2$ are complementary
 Prove: $\overrightarrow{XA} \perp \overrightarrow{XC}$



-
- | | |
|---|----|
| 1. $\angle 1$ and $\angle 2$ are complementary | 1. |
| 2. $m\angle 1 + m\angle 2 = \underline{\hspace{2cm}}$ | 2. |
| 3. $m\angle AXC = m\angle 1 + m\angle 2$ | 3. |
| 4. $m\angle AXC = \underline{\hspace{2cm}}$ | 4. |
| 5. $\angle AXC$ is a right angle | 5. |
| 6. | 6. |

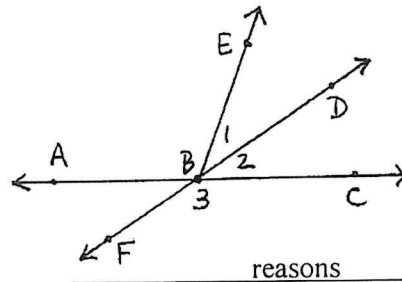
VI. Given: $\angle 1$ and $\angle 2$ are supplementary
 Prove: $\angle 3$ and $\angle 4$ are supplementary



-
- | | |
|----|--|
| 1. | 1. Given |
| 2. | 2. Def. of supplementary angles |
| 3. | 3. Vertical angles are congruent |
| 4. | 4. Def. of congruent angles |
| 5. | 5. Substitution |
| 6. | 6. Def. of <u> </u> |

VII. Given: \overline{BD} bisects $\angle EBC$

Prove: $\angle 1$ and $\angle 3$ are supplementary



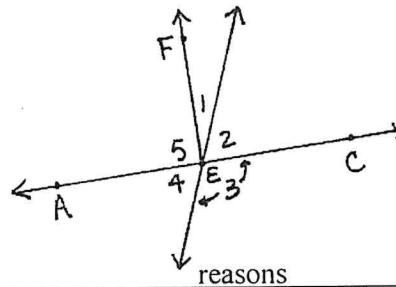
_____ statements _____

_____ reasons _____

- | | |
|---|----|
| 1. \overline{BD} bisects $\angle EBC$ | 1. |
| 2. $\angle 1 \cong \angle 2$ | 2. |
| 3. $\angle 2$ and $\angle 3$ form a linear pair | 3. |
| 4. $m\angle 2 + m\angle 3 = 180$ | 4. |
| 5. $m\angle 1 = m\angle 2$ | 5. |
| 6. $m\angle 1 + m\angle 3 = 180$ | 6. |
| 7. $\angle 1$ and $\angle 3$ are supplementary | 7. |

VIII. Given: $\angle FEC$ is a right angle

Prove: $\angle 1$ and $\angle 4$ are complementary



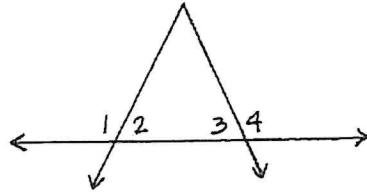
_____ statements _____

_____ reasons _____

- | | |
|--|----|
| 1. $\angle FEC$ is a right angle | 1. |
| 2. $m\angle FEC = 90$ | 2. |
| 3. $m\angle FEC = m\angle 1 + m\angle 2$ | 3. |
| 4. $m\angle 1 + m\angle 2 = 90$ | 4. |
| 5. $\angle 2 \cong \angle 4$ | 5. |
| 6. $m\angle 2 = m\angle 4$ | 6. |
| 7. $m\angle 1 + m\angle 4 = 90$ | 7. |
| 8. $\angle 1$ and $\angle 4$ are complementary | 8. |

IX. Given: $\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$



statements

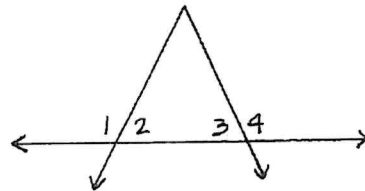
reasons

1. $\angle 1$ and $\angle 2$ form a linear pair
 $\angle 3$ and $\angle 4$ form a linear pair
2. $\angle 1$ and $\angle 2$ are supp.
 $\angle 4$ and $\angle 3$ are supp.
3. $\angle 2 \cong \angle 3$
4. $\angle 1 \cong \angle 4$

- 1.
- 2.
- 3.
- 4.

X. Given: $\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$



statements

reasons

1. $\angle 1$ and $\angle 2$ form a linear pair
 $\angle 3$ and $\angle 4$ form a linear pair
2. $m\angle 1 + m\angle 2 = 180$
 $m\angle 3 + m\angle 4 = 180$
3. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$
4. $\angle 2 \cong \angle 3$
5. $m\angle 2 = m\angle 3$
6. $m\angle 1 = m\angle 4$
7. $\angle 1 \cong \angle 4$

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.