Geometry A
Proofs involving parallel lines and transversals
Practice Worksheet #2

Name: _____
Date: _____ Period: _____

# REASON BANK

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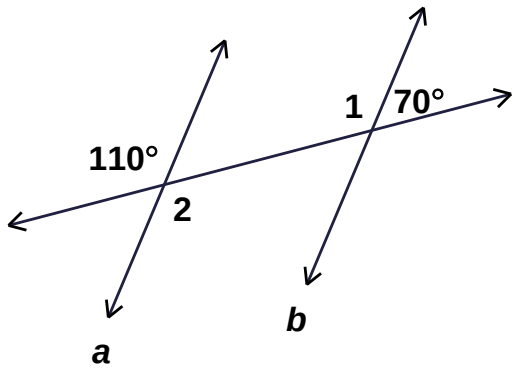
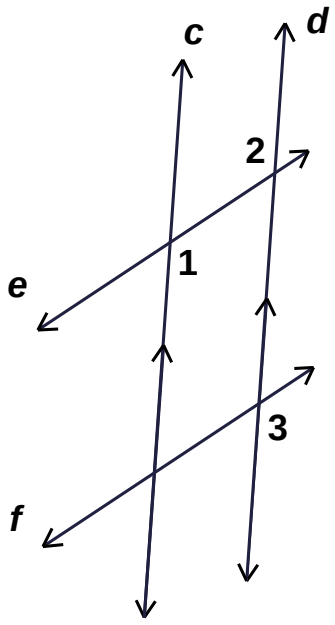
|---|---|
| Addition Property | Division Property |
| Alternate Interior Angles Theorem | Distributive Property |
| Alternate Interior Angles Converse Theorem | Given |
| Alternate Exterior Angles Theorem | Linear Pair Postulate |
| Alternate Exterior Angles Converse Theorem | Multiplication Property |
| Combine Like Terms | Simplification |
| Consecutive Interior Angles Theorem | Substitution Property |
| Consecutive Interior Angles Converse Theorem | Subtraction Property |
| Corresponding Angles Postulate | Transitive Property |
| Corresponding Angles Converse Postulate | Vertical Angles Theorem |

1) Given the measures in the diagram, please prove $a||b$.



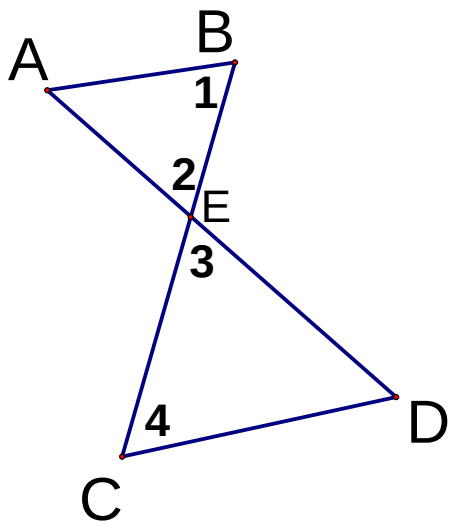

| Statements | Reasons |
|---|---|
| 1. Diagram w/values | 1. |
| 2. $m\angle 1 + 70^o = 180^o$ | 2. |
| 3. | 3. Subtraction Property |
| 4. $m\angle 2 = 110^o$ | 4. |
| 5. | 5. |

2) Given $\angle 1 \cong \angle 3$ and $c||d$, please prove $e||f$.



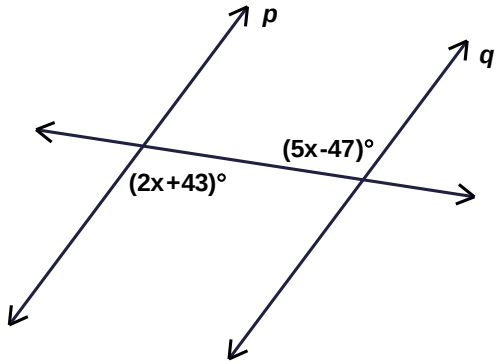

| Statements | Reasons |
|---|---|
| 1. $c||d$ | 1. |
| 2. $\angle 1 \cong \angle 2$ | 2. |
| 3. $\angle 1 \cong \angle 3$ | 3. |
| 4. $\angle 2 \cong \angle 3$ | 4. |
| 5. $e||f$ | 5. |

3) Given $\overline{AB}||\overline{CD}$ and $\angle 2 \cong \angle 4$, please prove $\angle 1 \cong \angle 3$




| Statements | Reasons |
|---|---|
| 1. | 1. Given |
| 2. $\angle 1 \cong \angle 4$ | 2. |
| 3. $\angle 2 \cong \angle 4$ | 3. |
| 4. $\angle 2 \cong \angle 3$ | 4. |
| 5. $\angle 1 \cong \angle 3$ | 5. |

4) Given that $p||q$, please solve for x. Justify **every** step using the same "proof" strategy.




| Statements | Reasons |
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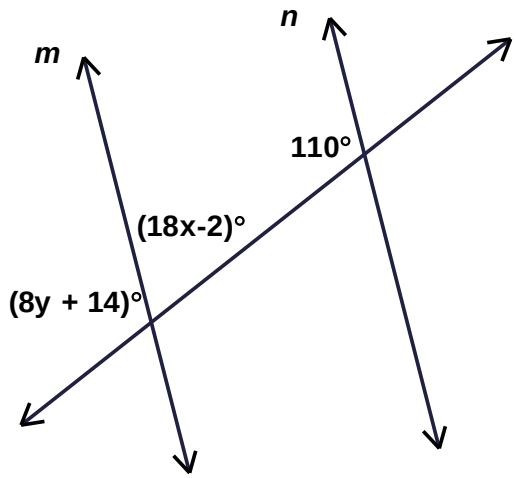
5) Given that $m||n$, please solve for $x$ and $y$. Justify **every** step using the "proof" strategy.




| Statements | Reasons |
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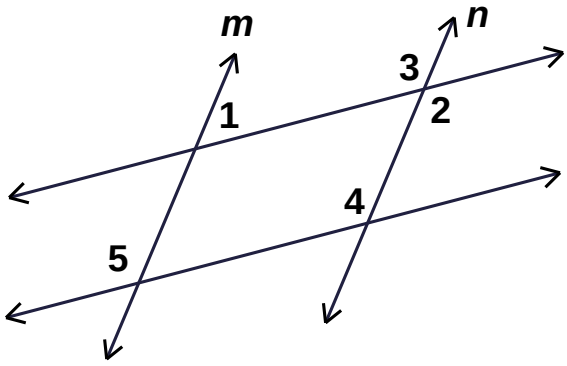
6) Given $\angle 1$ and $\angle 2$ are supplementary, please prove $\angle 4 \cong \angle 5$.




| Statements | Reasons |
|---|---|
| 1. | 1. |
| 2. $\angle 2 \cong \angle 3$ | 2. |
| 3. | 3. Substitution Property |
| 4. $m\|\|n$ | 4. |
| 5. | 5. |