Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Proofs of Special Quadrilaterals**

Monica

Geometry Period:\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1) Prove that the diagonals in a parallelogram bisect each other.

Given: ABCD is a parallelogram

Prove: 

D

A

E

B

C

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1. ABCD is a parallelogram | 1.  |
| 2.  | 2.  |
| 3.  | 3.  |
| 4.  | 4.  |
| 5.  | 5. Opposite sides in a parallelogram are congruent |
| 6.  | 6.  |
| 7.  | 7. CPCTC |

2) Prove that the opposite angles in a parallelogram are congruent.

Given: ABCD is a parallelogram

Prove: 

A

D

C

B

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1.  | 1. Given |
| 2.  | 2.  |
| 3.  | 3. Alternate interior angles are congruent. |
| 4.  | 4.  |
| 5.  | 5. Reflexive Property |
| 6.  | 6.  |
| 7.  | 7.  |

3) Prove that the opposite sides in a parallelogram are congruent.

Given: ABCD is a parallelogram

Prove: 

D

A

E

B

C

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1.  | 1. Given |
| 2.  | 2. The diagonals in a parallelogram bisect each other |
| 3.  | 3. The diagonals in a parallelogram bisect each other |
| 4.  | 4.  |
| 5.  | 5.  |
| 6.  | 6. CPCTC |

4) Prove that the diagonals in a rectangle are congruent.

Given: ABCD is a rectangle

Prove: 

B

C

D

A

E

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1.  | 1. Given |
| 2.  | 2.  |
| 3.  | 3.  |
| 4.  | 4.  |
| 5.  | 5.  |
| 6.  | 6.  |
| 7.  | 7. SAS |
| 8.  | 8.  |

5) Prove that the diagonals in a rhombus are perpendicular.

Given: ABCD is a rhombus

Prove: 

B

A

E

D

C

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1. ABCD is a rhombus | 1.  |
| 2.  | 2.  |
| 3.  | 3. The diagonals bisect the angles in a rhombus |
| 4.  | 4.  |
| 5.  | 5.  |
| 6.  | 6. CPCTC |
| 7.  | 7.  |
| 8.  | 8.  |
| 9.  |  |
| 10. | 10. Division Property |
| 11.  | 11. Definition of perpendicular |

6) Prove that the diagonals in a rhombus bisect the angles.

Given: ABCD is a rhombus

Prove: 

B

A

E

D

C

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| 1. ABCD is a rhombus | 1.  |
| 2.  | 2.  |
| 3.  | 3. The diagonals bisect each other in a rhombus |
| 4.  | 4. Reflexive Property |
| 5.  | 5.  |
| 6.  | 6. CPCTC |

 7)

 Given: *PROE* is a rhombus, , , 

Prove: 

