Name:

Date:

School:

Facilitator:

7.03 Parallelograms

Total Points: 49

**Part 1: Find the missing measures in the parallelograms below. If there is not enough information to find a missing measure, enter “not enough information” AND explain what information you would need to solve.**

|  |  |  |  |
| --- | --- | --- | --- |
| Parallelogram ABCD  • The measure of angle A is 67 degrees. |  | | Parallelogram ABCD  • The measure of angle A is 125 degrees. |
| 1. ∠B =      o ∠C =      o ∠D =      o |  | | 1. ∠B =      o ∠C =      o ∠D =      o |
|  |  | |  |
| Parallelogram ABCD  • The measure of angle A is 90 degrees. |  | | Parallelogram ABCD  • The measure of angle A is 40 degrees. |
| 1. ∠B =      o ∠C =      o ∠D =      o |  | | 1. ∠B =      o ∠C =      o ∠D =      o |
|  |  | |  |
| Parallelogram ABCD  • The measure of angle A is 135 degrees. |  | | Parallelogram ABCD  • The measure of angle A is x. |
| 1. ∠B =      o ∠C =      o ∠D =      o |  | | 1. ∠B =      o ∠C =      o ∠D =      o |
|  |  | |  |
| Parallelogram ABCD  • AB equals 3. |  | | Parallelogram ABCD  • AB equals 8. |
| 1. BC =      CD =      AD = | |  | 1. BC =      CD =      AD = |
|  |  | |  |
| Parallelogram ABCD  • AD equals 4. |  | | Parallelogram ABCD  • AB equals 5. • AD equals 3. |
| 1. AB =       BC =      CD = |  | | 1. BC =      CD = |
|  |  | |  |
| Parallelogram ABCD  • Segments AC and BD are diagonals of the parallelogram. • The diagonals intersect at point L. • Segments AL and LC are marked congruent. • Segments DL and LB are marked congruent. • AL equals 3. |  | | Parallelogram ABCD  • Segments AC and BD are diagonals of the parallelogram. • The diagonals intersect at point L. • Segments AL and LC are marked congruent. • Segments DL and LB are marked congruent.  • LB equals 2.7. |
| 1. LB =       LC =       LD = |  | | 1. LA =       LC =       LD = |
|  |  | |  |
| Parallelogram ABCD  • Segments AC and BD are diagonals of the parallelogram.  • The diagonals intersect at point L. • Segments AL and LC are marked congruent. • Segments DL and LB are marked congruent.  • LB equals 3. • LA equals 4.1. |  | |  |
| 1. LC =       LD = |  | |  |

**Part 2: Solve for x.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parallelogram ABCD  • Segments AC and BD are diagonals of the parallelogram. • The diagonals intersect at point L. • Segments AL and LC are marked congruent. • Segments DL and LB are marked congruent. • LB equals 11. • LA equals 14. • LC equals 3x plus 2.** |  | Parallelogram ABCD  • Segments AC and BD are diagonals of the parallelogram. • The diagonals intersect at point L. • Segments AL and LC are marked congruent.  • Segments DL and LB are marked congruent.  • LA equals 24. • LC equals 6x. | |
| 1. x = |  | 1. x = | |
|  |  | |  |
| Parallelogram ABCD  • AB equals 2x and DC equals x plus 7. |  | Parallelogram ABCD  • AB equals 30, AD equals 24, and  DC equals 3x plus 3. | |
| 1. x = |  | 1. x = | |
|  |  |  | |
| Parallelogram ABCD  • The measure of angle A equals x, and the measure of angle D equals 55 degrees. |  | Parallelogram ABCD  • The measure of angle A equals 9 x minus 10, and the measure of angle C equals 125 degrees. | |
| 1. x = |  | 1. x = | |

A Statements and Reasons Table 
• The statements column has the following statements: 1. ABCD is a parallelogram.; 2. Segment AB is parallel to segment CD, and segment BC is parallel to segment AD.; 3. Angle 1 is congruent to angle 2, and angle 3 is congruent to angle 4. ; 4. Segment AC is congruent to segment AC.; 5. Triangle ABC is congruent to triangle CDA.; 6. Segment AB is congruent to segment CD, and segment BC is congruent to segment AD.
• The reasons column has the following reasons: 1. blank; 2. blank; 3. blank; 4. blank; 5. blank; 6. blank.
**Part 3 Complete the proof using the choices at the bottom  
20. Given: ABCD is a parallelogram  
 Prove: **

A. Definition of a parallelogram  
B. CPCTC (Corresponding parts of congruent triangles are congruent)  
C. Given  
D. Alternate Interior Angles are congruent  
E. Reflexive Property of congruence  
F. ASA (Angle Side Angle)