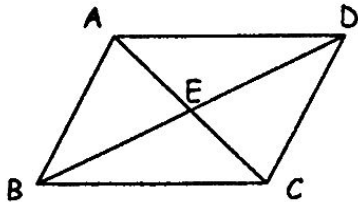


Proof Handout 7

Which of the following are adequate proofs? Be prepared to explain why or why not.

Proof A

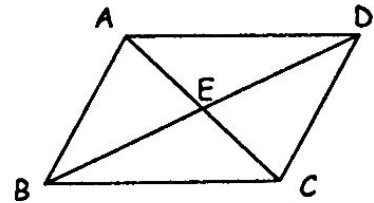


Given: ABCD is a parallelogram

Prove: $\overline{AE} \cong \overline{EC}$; $\overline{BE} \cong \overline{ED}$

When I was in the computer lab I noticed that the diagonals bisected each other, so this is just a property of parallelograms.

Proof B

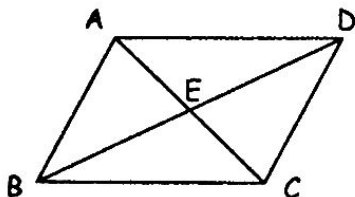


Given: ABCD is a parallelogram

Prove: $\overline{AE} \cong \overline{EC}$; $\overline{BE} \cong \overline{ED}$

- | | |
|----------------------------------|-----------------------|
| 1. $AD \parallel BC$ | Def. of Parallelogram |
| 2. $AB \parallel DC$ | Def. of Parallelogram |
| 3. $\angle AED \cong \angle CEB$ | Vertical Angles |
| 4. $AE \cong EC$ | SAS |
| 5. $BE \cong ED$ | SAS |

Proof C

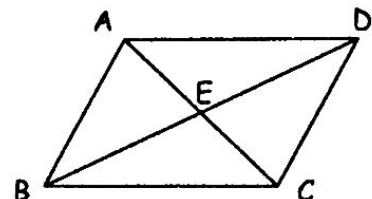


Given: ABCD is a parallelogram

Prove: $\overline{AE} \cong \overline{EC}$; $\overline{BE} \cong \overline{ED}$

- | | |
|---|---------------------------|
| 1. $AD \parallel BC$ | Def. of Parallelogram |
| 2. $AB \parallel DC$ | Def. of Parallelogram |
| 3. $AD \cong BC$ | Property of Parallelogram |
| 4. $BC \cong DC$ | Property of Parallelogram |
| 5. $\angle AED \cong \angle CEB$ | Vertical Angles |
| 6. $\angle DAE \cong \angle BCE$ | Alt. Interior Angles |
| 7. $\angle ADE \cong \angle CBE$ | Alt. Interior Angles |
| 8. $AE \cong AE$ | Reflexive Property |
| 9. $DE \cong DE$ | Reflexive Property |
| 10. $BE \cong BE$ | Reflexive Property |
| 11. $CE \cong CE$ | Reflexive Property |
| 12. $\triangle AED \cong \triangle CEB$ | SSS |
| 13. $AE \cong EC$ | CPCTC |
| 14. $BE \cong ED$ | CPCTC |

Proof D



Given: ABCD is a parallelogram

Prove: $\overline{AE} \cong \overline{EC}$; $\overline{BE} \cong \overline{ED}$

- | | |
|--|---------------------------|
| 1. $AD \parallel BC$ | Def. of Parallelogram |
| 2. $AB \parallel DC$ | Def. of Parallelogram |
| 3. $AD \cong BC$ | Property of Parallelogram |
| 4. $BC \cong DC$ | Property of Parallelogram |
| 5. $\angle DAE \cong \angle BCE$ | Alt. Interior Angles |
| 6. $\angle ADE \cong \angle CBE$ | Alt. Interior Angles |
| 7. $\triangle AED \cong \triangle CEB$ | ASA |
| 8. $AE \cong EC$ | CPCTC |
| 9. $BE \cong ED$ | CPCTC |