Unit 7

Triangle and Quadrilateral Proofs



Geometry – Desmond

**Triangle Proofs**

5 Triangle Proofs

1.

2.

3.

4.

5.

***NEVER USE***

CPCTC

Types of segments

Altitude

Angle Bisector

Median

VERTICAL ANGLES

1. Given: AC = XZ, <AEC = XEZ, <ACE = <XZE. Prove ACE$\tilde{=}$ XZE

A

X

E

Z

C

1. Given: AE = XE and ZE = CE. Prove ACE$\tilde{=}$ XZE

A

X

E

Z

C

1. Given AE = XE and BE = ZE. Prove ABE$\tilde{=}$ XZE

Z

X

E

B

A

REFLEXIVE PROPERTY

1. Given: AC = BC, AE = BE, EC = EC. Prove AEC$\tilde{=}$ BEC

EE

C

A

B

1. Given: m<AEC = m<EAC and m<BEA=m<CAE. Prove AEC$\tilde{=}$ BEC

B

EE

C

A

1. Given: m<AEB = m<FBE, m<ABE=m<FEB. Prove ABE $\tilde{=}$ FBE

EE

A

B

FE

PARALLEL LINES

Statements Reasons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given: $∠1≅∠3$

 $\overbar{QU} || \overbar{DA} $

Prove: QUA $\tilde{=}$ ADQ

Given:$ C is the midpoint of \overbar{AE} and \overbar{AB} || \overbar{DE}$

Statements Reasons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Prove: ACB $\tilde{=}$ ECD

D

A

E

C

B



Statements Reasons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given: Parallelogram QDAU

Prove: QAD $\tilde{=}$ ADQ

CPCTC

|  |  |  |
| --- | --- | --- |
| **Ex. 1** $ΔQRS=ΔXYZ$ $$∠Y= \\_\\_\\_\\_\\_$$$\overbar{QS}= \\_\\_\\_\\_\\_$    | **Ex. 2**$$ΔABC=ΔDEF$$$$∠A= \\_\\_\\_\\_\\_$$$\overbar{FE}= \\_\\_\\_\\_\\_$ | **Ex. 3**$$ΔGHI=ΔJKL$$$$\overbar{GI}= \\_\\_\\_\\_\\_$$$$∠J= \\_\\_\\_\\_\\_$$Draw your own! |

1 Given .

Which statement must be true?

|  |  |
| --- | --- |
| 1) |  |
|  2) |  |
| 3) |  |
| 4) |  |

 2. If , which statement is
always true?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

YOU MUST **ALWAYS** PROVE THE TRIANGLES ARE CONGRUENT FIRST!!

Statements Reasons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Given: Triangle ACB is an isosceles triangle and CE bisects AB

Prove: $∠AEC≅∠BEC$

EE

C

A

B

Statements Reasons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

