# 1/8 Aim: Mini proofs

Do now have your homework out

Homework: worksheet
Quiz Friday
midterm 1/24

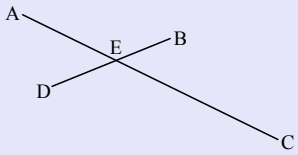
Dec 22-2:02 PM

Homework

Segment bisector: Segment that divides a segment into two congruent segments.

$\overline{AC}$ bisects $\overline{BD}$ at E.

conclusion
reason

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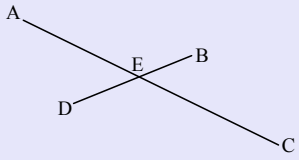
Using the same picture:
Given $\overline{AC}$ and $\overline{BD}$ bisect each other at E then

conclusion
reason

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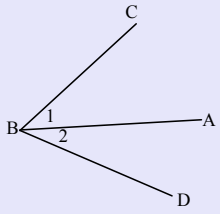
Angle bisector: Divides an angle into two congruent angles

Given: $\overline{AB}$ bisects <CBD

conclusion
reason

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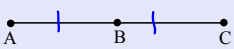
Midpoint: Divides a segment into two congruent segments.

Given: B is the midpoint of $\overline{AC}$

conclusion $AB \cong BC$
reason A midpt divides a segment into 2 $\cong$ segments

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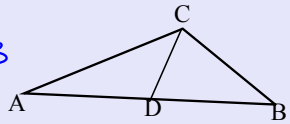
Median: Is a segment the goes from a vertex to the midpoint of the opposite side of triangle.
A median divides a segment into two congruent segments.

Given: Triangle ABC with median CD

conclusion $AD \cong DB$
reason

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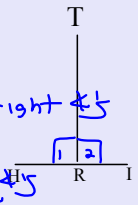
Perpendicular: Two lines are perpendicular if they intersect to form right angles.

Given: $\overline{HI} \perp \overline{TR}$

2 statements

conclusion ① ∠1 and ∠2 are right ∠s
② ∠1 ≅ ∠2

reason ① ⊥ lines form right ∠s
② All right ∠s are ≅

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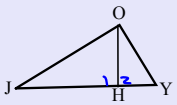
Altitude: Segment that goes from a vertex perpendicular to the opposite side.
Means it forms right angles and all right angles are congruent.

Given triangle JOY with altitude $\overline{OH}$

3 statements

conclusion ① $\overline{OH} \perp \overline{JY}$
② ∠1 and ∠2 are right ∠s
③ ∠1 ≅ ∠2

reason

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Median ➡ midpt ➡ ≅

Altitude ➡ ⊥ line ➡ right ∠s ➡ ≅

Intersecting lines ➡ vertical ∠s

➡

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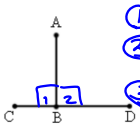
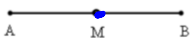
Name:
Geometry

1. $\overline{AB} \perp \overline{CD}$



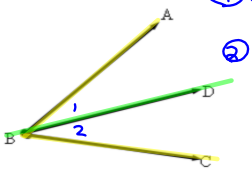

| Statements | Reasons |
|---|---|
| ① AB ⊥ CD | ① given |
| ② ∠1 and ∠2 are 90° | ② ⊥ lines form 90° ∠s |
| ③ ∠1 ≅ ∠2 | ③ All right ∠s ≅ |

2. M is the midpoint of $\overline{AB}$



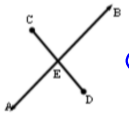

| Statements | Reasons |
|---|---|
| ① M is midpt of AB | ① given |
| ② AM ≅ MB | ② A midpt divides a segment into 2 ≅ segments |

3. $\overline{BD}$ bisects $\angle ABC$



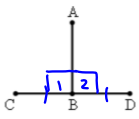

| Statements | Reasons |
|---|---|
| ① BD bisects ∠ABC | ① given |
| ② ∠ABD ≅ ∠CBD | ② An ∠ bisector divides an ∠ into 2 ≅ ∠s |

4. $\overline{AB}$ bisect $\overline{CD}$ at E.



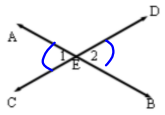

| Statements | Reasons |
|---|---|
| ① AB bisects CD at E | ① given |
| ② CE ≅ ED | ② A bisector divides a segment into 2 ≅ segments |

5. $\overline{AB}$ is the perpendicluar bisector of $\overline{CD}$



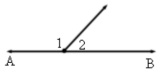

| Statements | Reasons |
|---|---|
| ① AB is the ⊥ bisector of CD | ① given |
| ② ∠1 and ∠2 are right ∠'s | ② ⊥ lines form right ∠'s |
| ③ ∠1 ≅ ∠2 | ③ All right ∠'s ≅ |
| ④ CB ≅ BD | ④ A bisector divides a segment into 2 ≅ segments |

6. $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersects at E.



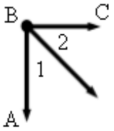

| Statements | Reasons |
|---|---|
| ① AB and CD intersect at E | ① given |
| ② ∠1 ≅ ∠2 | ② intersecting lines form ≅ vertical ∠'s |

7. $\overline{AB}$ is a straight line



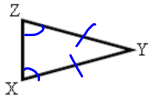

| Statements | Reasons |
|---|---|
| ① AB is a straight line | ① given |
| ② ∠1+∠2=180 | ② 2 ∠'s that form a linear pair are supplementary |

8. $\angle ABC$ is a right angle




| Statements | Reasons |
|---|---|
| ① ∠ABC is a right ∠ | ① given |
| ② ∠1+∠2=90 | ② Two ∠'s that form a right ∠ are complementary |

9. Triangle $XYZ$, with $\angle X \cong \angle Z$




| Statements | Reasons |
|---|---|
| ① ∠X ≅ ∠Z | ① given |
| ② YZ ≅ YX | ② Sides opp. ≅ ∠'s are ≅ |

mini proofs

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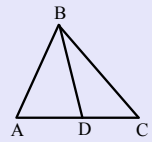
Pre proof 1:

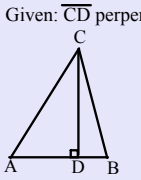
Given: $\overline{BD}$ is a median

| Statements | Reasons |
|---|---|




Dec 23-6:29 AM

Given: $\overline{CD}$ perpendicular to $\overline{AB}$




| Statements | Reasons |
|---|---|

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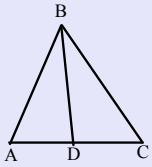
Given: $\overline{BD}$ bisects <ABC




| Statements | Reasons |
|---|---|

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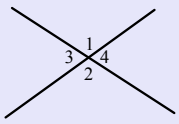
Given: Two intersecting segments

| Statements | Reasons |
|---|---|

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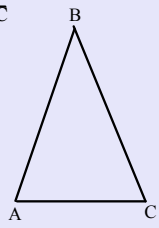
Given: Triangle ABC is isosceles with base $\overline{AC}$

| Statements | Reasons |
|---|---|

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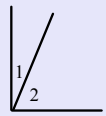
Given: <1 is complementary to <2

| Statements | Reasons |
|---|---|
| | |

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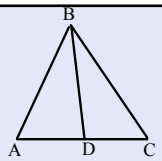
Given: $\overline{BD}$ bisects $\overline{AC}$

| Statements | Reasons |
|---|---|
| | |

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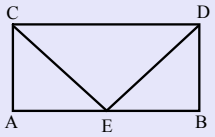
E is the midpoint of $\overline{AB}$

| Statements | Reasons |
|---|---|
| 1. E is the midpoint of AB | 1. Given |

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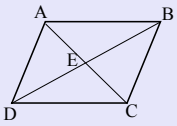
Given: Diagonal $\overline{AC}$ bisects diagonal $\overline{BD}$




| Statements | Reasons |
|---|---|
| 1. Diagonal $\overline{AC}$ bisects diagonal $\overline{BD}$ | 1. Given |

Dec 23-6:29 AM

# Homework

| Statements | Reasons |
|---|---|
| | |

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