1/6 Aim: Introduction to proofs

Do now: Vocabulary practice
MATCHING COLUMN

Homework: Worksheet
Midterm January 24

Dec 22-7:58 AM

1. Acute angle

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2. Right angle

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3. Angle bisector

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4. Isosceles triangle

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5. Complementary angles

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6. Straight angle

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7. Congruent angles

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8. Bisector of a segment

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9. Equilateral triangle

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10. Scalene triangle

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11. Right triangle

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12. Obtuse angle

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13. Altitude of a triangle

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14. Congruent triangles

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15. Supplementary angle

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16. Obtuse triangle

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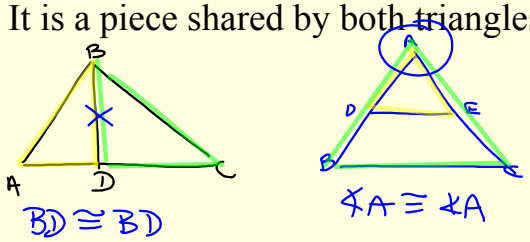
Reflexive property--

any thing is equal to itself.
It is a piece shared by both triangles.



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Substitution postulate--

if two objects are equal to the same object they are equal to each other.

$a=b$
$a=c$
$b=c$

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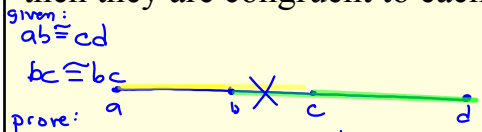
Addition postulate --

If you add the same object to equals then they are congruent to each other.

given: $ab \cong cd$
$bc \cong bc$
prove: $ac \cong bd$



$ab+bc = cd+bc$
$ac \cong bd$

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Subtraction postulate--

If you subtract the same object to equals then they are congruent to each other.

Given: $ac \cong bd$
Prove: $ab \cong cd$

$bc \cong bc$
$ac-bc \cong bd-bc$
$ab \cong cd$

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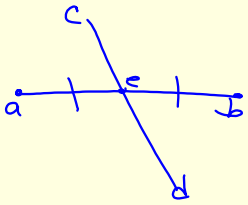
Segment bisector --

a line, segment or ray that intersects a segment and divides the segment into two equal parts.

cd bisects ab
$ae \cong eb$



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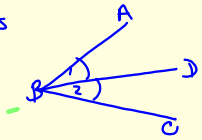
Angle bisector--

A line or ray that intersect the angle at the vertex and divides the angle into two congruent angles

BD bisects $\angle ABC$



$\angle 1 \cong \angle 2$

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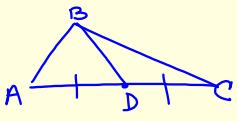
Median of a triangle --

a line segment that goes from a vertex to the midpoint of the opposite side of the triangle, dividing the segment it intersects into two congruent parts.



BD is a median
D is the midpoint of AC
$AD \cong DC$

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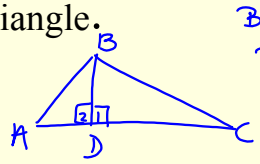
Altitude of a triangle --

a segment that goes from a vertex perpendicular to the opposite side of the triangle.



BD is an altitude

BD ⊥ AC

∠1 and ∠2 are 90°

∠1 ≅ ∠2

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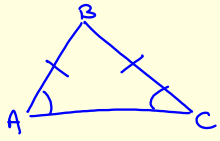
Isosceles triangle --

with two congruent sides and two congruent base angles.



AB ≅ BC

∠A ≅ ∠C (base ∠'s)

∠B ⇒ vertex ∠

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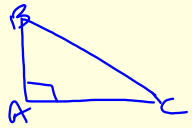
Right triangle --

a triangle with a right angle



∠A is 90°

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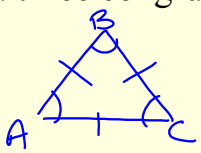
Equilateral triangle --

A triangle with three congruent sides and three congruent angles.



∠A ≅ ∠B ≅ ∠C = 60°

AB ≅ BC ≅ AC

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Using REFLEXIVE - ADDITION
- SUBTRACTION
POSTULATES

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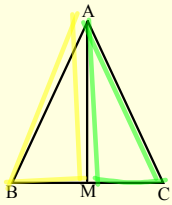
Reflexive property: Use Reflexive when you have one part (side or angle) that is part of two triangles.



Which part is in the two triangles?

AM ≅ AM

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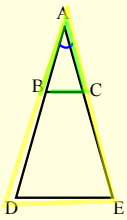
Which part is in the two triangles?



∠A ≅ ∠A

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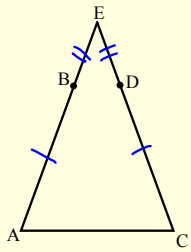
Addition postulate: The sum of two equals are equal.

If $\overline{AB} \cong \overline{CD}$ and
$\overline{BE} \cong \overline{DE}$

then:
AB + BE ≅ CD + DE
AE ≅ CE



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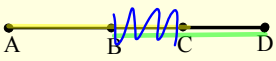
Subtraction postulate: Subtracting equals from equals are equal.

If $\overline{AC} \cong \overline{BD}$
Show: $\overline{AB} \cong \overline{CD}$



AB − BC ≅ BD − BC
AB ≅ CD

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Homework

Drawing conclusion from vocabulary

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