Section G1 : Geometry Supplement

background: (will not be tested)

     line

     ray

     line segment

angles: (will be tested)

          angle ≡ the intersection of
two rays
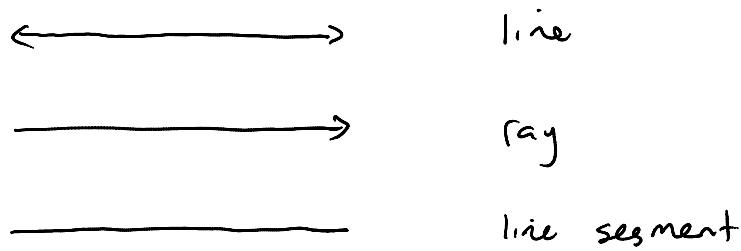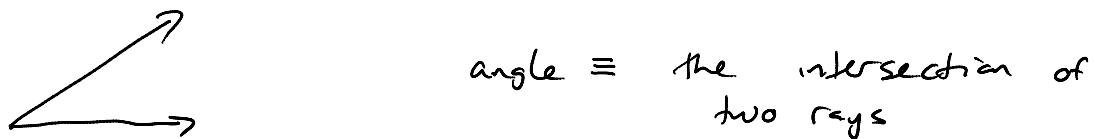
units :   degrees   (practical)

radians   (SI)

example: 35°   (degrees)

35   (no degree sign means
radians)

— in degrees, one full revolution:

     360°

(later, we'll see that one rev
= 2π radians)

naming conventions:
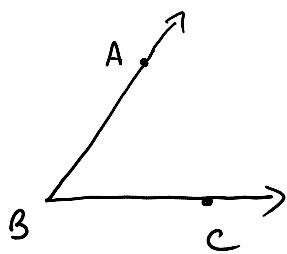

Using points

$\angle ABC$
or $\angle CBA$
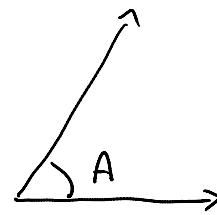
Using the angle itself

$\angle A$
or just A

(another common symbol for angles is Greek letter theta
θ)

also:

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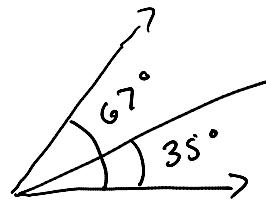
classification of angles:
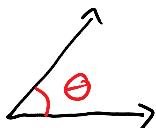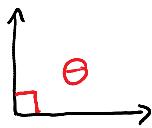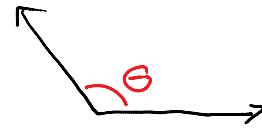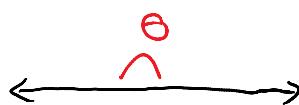
acute	right	obtuse	straight
$0 < \theta < 90°$	$\theta = 90°$	$90° < \theta < 180°$	$\theta = 180°$

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jargon:

complementary angles $\equiv$ two angles that add to $90°$

supplementary angles $\equiv$ two angles that add to $180°$

Coplanar — lines in the same plane are said to be coplanar

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perpendicular lines:

- two coplanar lines are perpendicular if (and only if) the angle between them is 90°

notation: line AB $\perp$ CD line
                        ↑
              "is perpendicular to"

parallel lines:

- two coplanar lines are parallel iff they don't intersect

notation: AB $\parallel$ CD

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vertical angles:
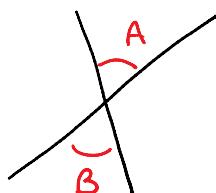
$\angle A = \angle B$ if A & B are
   vertical angles
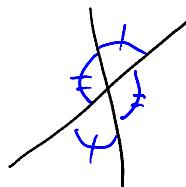
note: use ⅄ notation to denote equal angles

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corresponding angles:
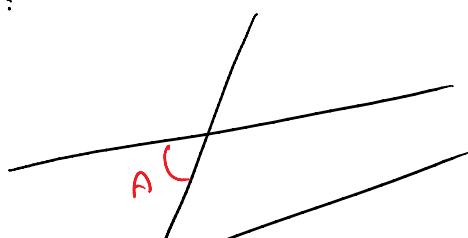
← two lines that are not necessarily parallel

A

$\angle A$ and $\angle B$ are corresponding angles
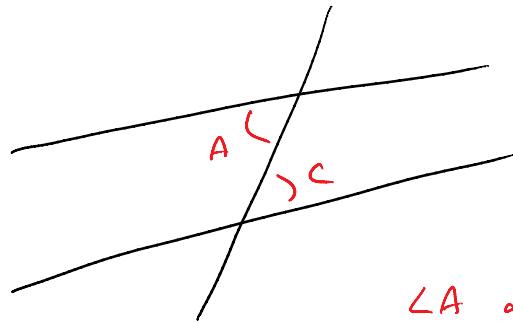
$\angle A$ and $\angle C$ are called alternate interior

parallel lines:

denote that these two lines are $\parallel$
$-$ parallel
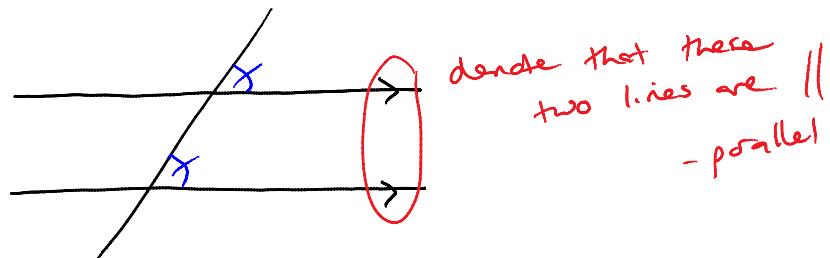
corresponding angles for parallel lines are equal
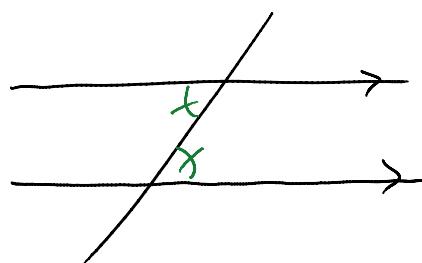
alternate interior angles for parallel lines are equal

example: mark up on the diagram, using the x and y notation, all of the congruent angles

$\hookrightarrow$ angles equal in measure

transversal (a line that cuts from both)
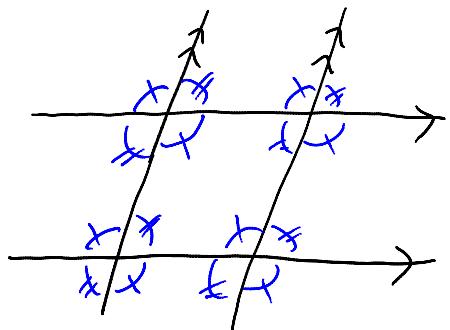
triangle — a three-sided polygon

nice property: the sum of the interior angles is 180°

classification of triangles using sides:
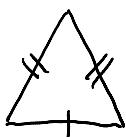
scalene   isosceles   equilateral

nice property
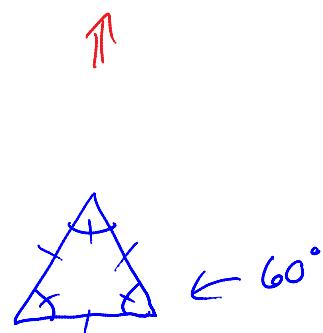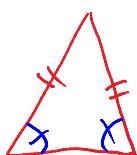
acute
triangle

classification of triangles using angles:

acute   right   obtuse
triangle   triangle   triangle

(the other two
angles are
complementary
— add to 90°)

only one
angle is
actually obtuse

← 60°