Chapter 1

inductive + deductive reasoning.
(examples) (proof)

counterexample

conjecture

logic + reasoning problems

identify errors.

Even: $2n$

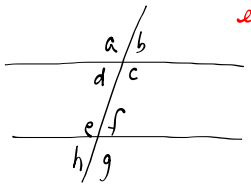
Odd: $2n-1$ or $2n+1$

abc

$100a + 10b + 1c$

Chapter 2

parallel lines and angles formed



equal

$a = c$ vertically opp.

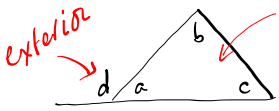
$a = e$ corresponding

$d = f$ alternat int.

$a = g$ alternate ext.

$d + e = 180^\circ$ Same side int

$b + g = 180^\circ$ Same side ext



$a + b + c = 180^\circ$

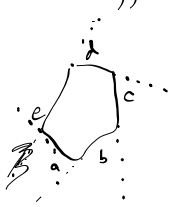
$d + a = 180^\circ$

$a = 180^\circ - d$

$180^\circ - d + b + c = 180^\circ$

$b + c = d$

Polygons →



$S(n) = 180^\circ(n-2)$ ← sum of interior angles.

Sum of exterior angles is ALWAYS 360°

Proofs! Be sure to provide reasons.

Chapters 3 + 4 - Trig Applications

Basic Right Triangle: SOH | CAH | TOA

$c^2 = a^2 + b^2$

Non-Right Triangle:

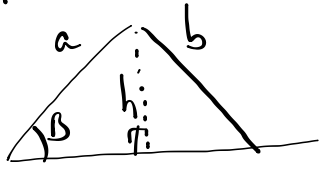
Law of Sines $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Law of Cosines $c^2 = a^2 + b^2 - 2ab\cos C$

(SAS) or (SSS)

Ambiguous case of Law of Sines: (SSA)

if



If B is acute.

if $h < b < a$ two triangles

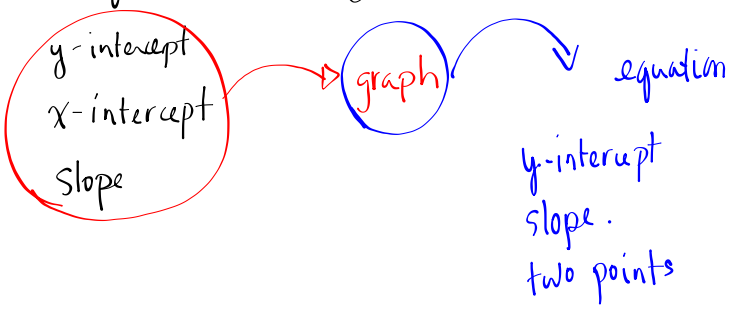
if $h = b$ then there is only one triangle

if $b < h$ no triangles.

Chapter 6 - Linear Inequalities

$y = mx + b \rightarrow ax + by = C$ (b: not same as y-intercept)

equation $\longleftrightarrow$ graph



* use a test point to see what section of the graph you shade
* $>$ $<$ ..... (dotted line)
  $\geq$ $\leq$ ——— (solid line)

* find intersection pts for a system of inequalities (solve algebraically)
* intersection pts are vertices of the feasible region.
  ↓ use to optimize by substituting (x,y) into the objective function.

Problem solving:

model
- Restrictions → * Domain * Range
- Constraints ← inequalities
- Objective Function ← what you are trying to minimize/maximize
- Graph + find vertices
- Sub into Ob Function
- Determine the optimal point
- Check to see that it satisfies the constraints.