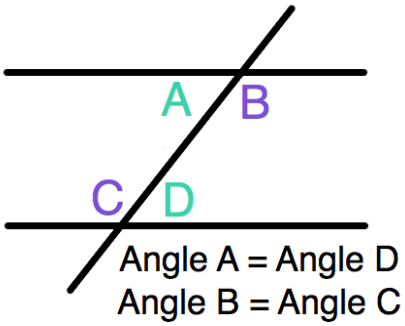
Concept 2 Glossary

THAYER SCHOOL OF ENGINEERING AT DARTMOUTH

abutment (or backstay)
anchorage point for main cables in suspension bridges

allowable stress
maximum stress a material can sustain before failure

alternate interior angles
equivalent angles formed when a line passes through two parallel lines



anchorage:
a place that provides a secure hold

bending:
the curved form taken by a slender element when subjected to loads perpendicular to the element

cable-stayed bridge:
a bridge with one or more towers; the weight of the deck is supported by cables that are connected directly to the towers

catenary:
form taken by a cable or rope under its own weight; represented mathematically using a hyperbolic cosine (cosh)

deck:
the horizontal portion of a bridge, used by cars, people, trains, etc.

equilibrium:
state in which opposing forces are balanced

force:
a push or pull on an object

funicular form:
form taken by a cable or rope under any given load

main cables:
cables that run between towers and support the suspender cables in a suspension bridge

parabola:
form taken by the main cables of a suspension bridge; represented mathematically using a quadratic equation ($y = x^2$)

semi-circle
half a circle; represented mathematically by $y=sqrt(x^2 + radius^2)$

span:
the distance between supports

stress:
force distributed over an area; force divided by cross-sectional area for tension or compression forces

suspender cable:
cables that supports the deck in a suspension bridge

suspension bridge:
a bridge in which the weight of the deck is supported by vertical cables suspended from larger, main cables that run between towers and are anchored at each end

tensile force:
“pulling” force on a member

tension:
force or stress “pulling” on a member

tower:
tall, vertical supports used in suspension and cable-stayed bridges

translation:
motion in one direction

tributary length:
half the distance to adjacent supports or structural elements.