z
+

(0, 0, 1)

ARBRITARY VERTICAL
FORCE ON CUBE

(1, 0, 1)

(0, 1, 1)

(1, 1, 1)

(0, 0, 0)

A

Pz

(1, 0, 0)

P Px

(0, 1, 0)

Py

D

x
+

B

(1, 1, 0)

+

y

C

z

A

Force of Bolts on
Cube

x

B

D

y

C

$A = k\delta_A$ $B = k\delta_B$ $C = k\delta_C$ $D = k\delta_D$

Force of Cube on Each Bolt

z

δ_A

δ_D

x

δ_B

δ_C

y
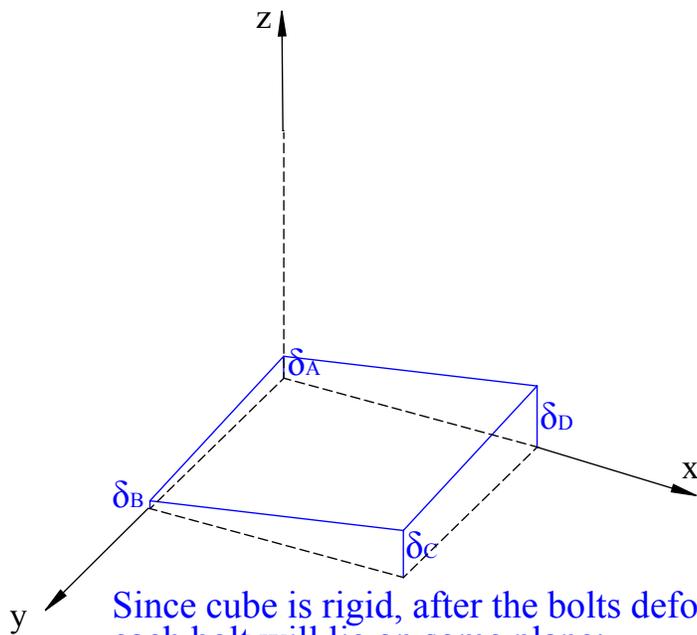
Since cube is rigid, after the bolts deform, the top of
each bolt will lie on some plane:

$ax + by + cz + d = 0$

$z = -(a/c)x - (b/c)y - (d/c)$

(note: the lower case variables a, b, c, d are different
than the upper case A, B, C, D