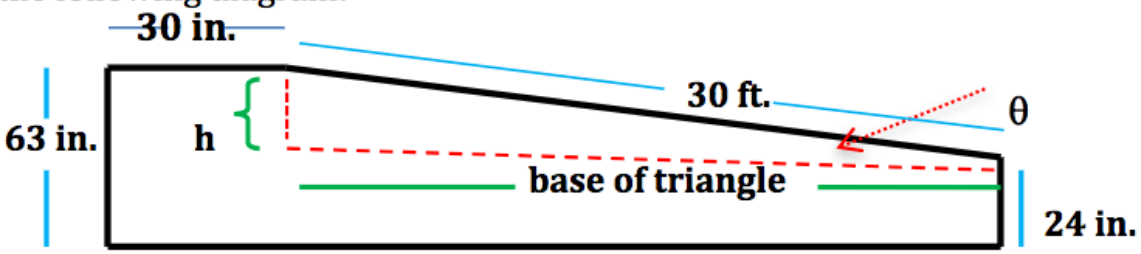
MathWalk

#11) Ramping Up: the handicap ramp by Chapell-Wilson Hall

Fig 15: the handicap ramp by Chapell-Wilson Hall

Given the following diagram:



Tasks:
Grades 9 – 12:

a) Find the angle of incline θ:
b) Find the slope of the incline.

> "For commercial use when somebody is sitting in the wheelchair or scooter while it climbs the ramp, ADA recommends a 1:12 slope, which means that every 1" of vertical rise requires at least 1' (12") of ramp length (5 degrees of incline)."
>
> http://www.discountramps.com/wheelchair-ramp-length/a/B20/

Grades 6 – 8:

c) Find the area of the triangle in the diagram:
d) Find the area of the entire Ramp: (Hint: break it up into multiple shapes)

Grades K – 5:

e) Convert 30 feet to inches.
f) Given that the area of the ramp is 17,456.4 in^2 and a brick covers 8.15 in^2. How many bricks would you need to complete the ramp? (Hint: remember always round up.)