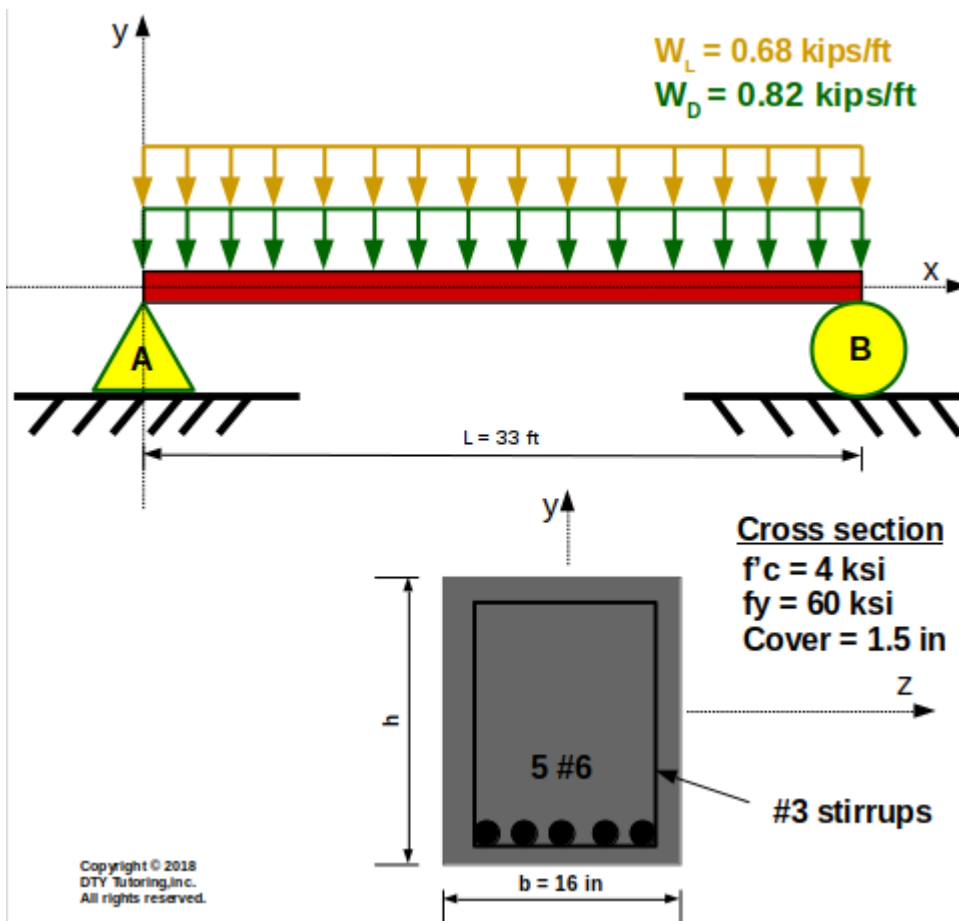Date: 22nd December 2018

Find the required height, h, of the reinforced concrete cross section for the simply supported beam with a uniform live and dead load (self-weight included) as shown below, assuming that the steel has yielded (use factored loads).

$W_L = 0.68$ kips/ft
$W_D = 0.82$ kips/ft

L = 33 ft

Cross section
f'c = 4 ksi
fy = 60 ksi
Cover = 1.5 in

5 #6

#3 stirrups

b = 16 in

Answers (refer to solutions for detail)

h =33 in