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Date: 23rd October 2019

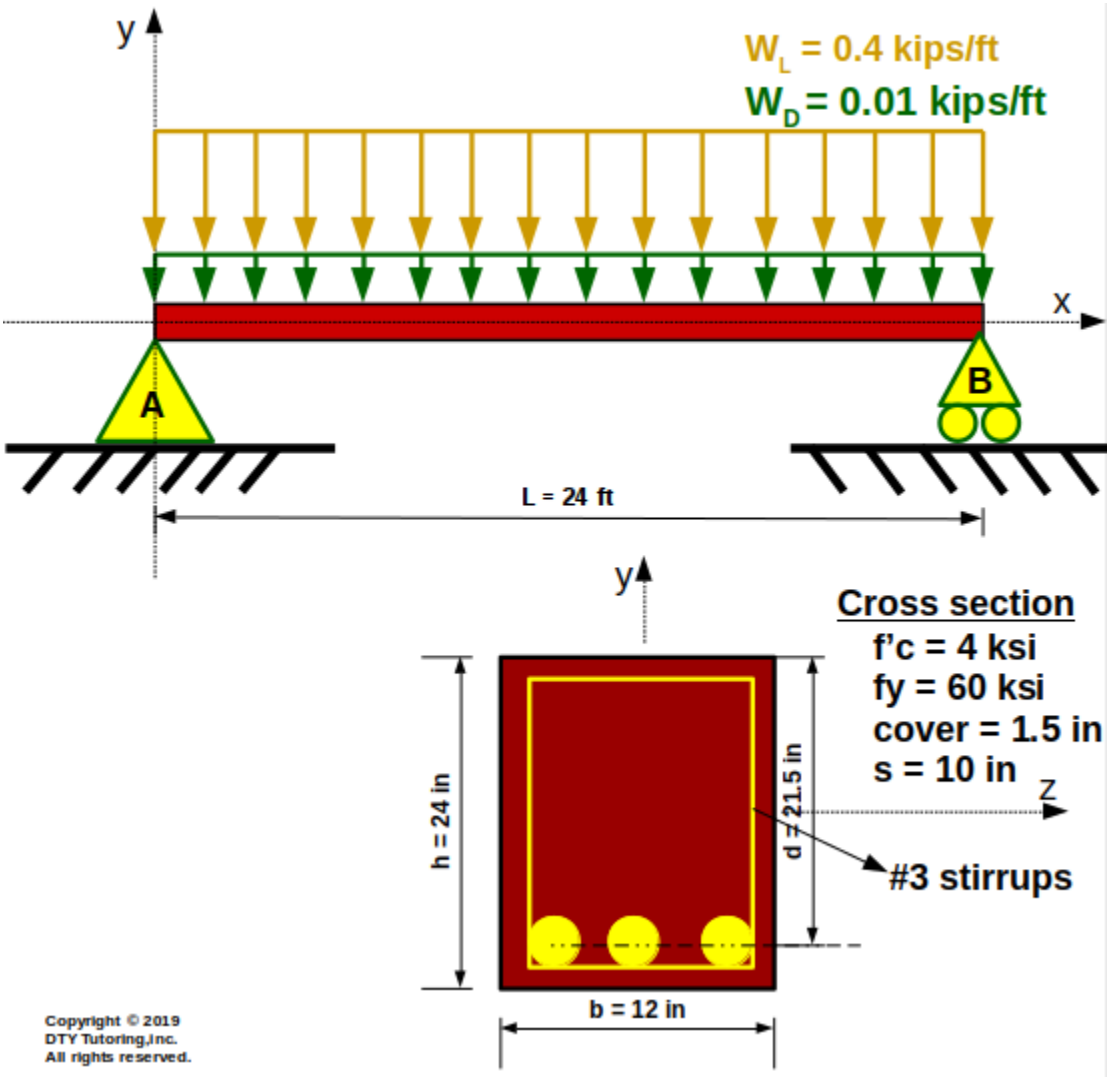
Design the shear reinforcement (stirrups) for this 24 ft span simply supported reinforced concrete beam as shown below. Self-weight of the beam is not included in the dead load, γ_{conc} *= 150 pcf.*

(a)Find $V_{u\ @\ d}$*,*

(b)Find the ultimate shear strength provided by concrete (Φ Vc) from cross section,

(c)Find (Φ Vc)/2 from cross section,

(d)Are stirrups required?



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Answers (refer to solutions for detail)

(a) $V_{u\ @\ d}$ = 10.3 kips

(b) ϕV_c = 24.5 kips

(c) (ϕV_c) /2 = 12.2 kips

(d) no stirrups required