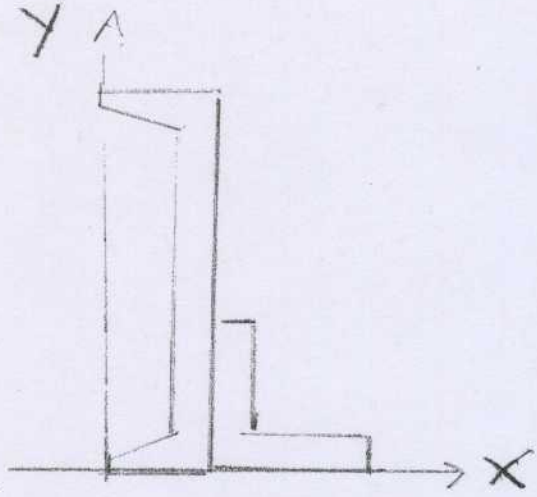
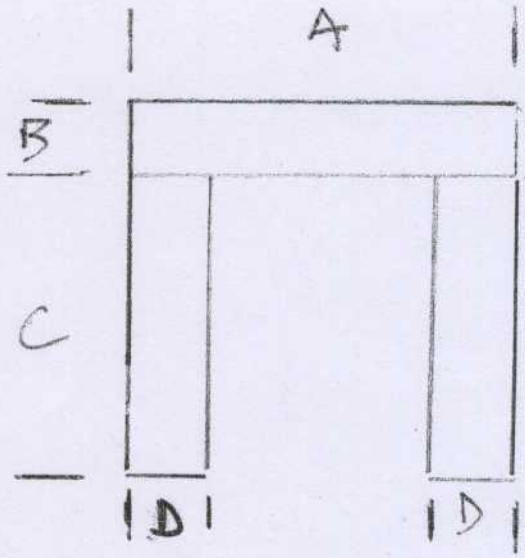
7



CHANNEL C 10 x 20

ANGLE L 6 x 6 x 1

DETERMINE CENTROID FOR COMPOSITE AREA $\bar{y}$



$$I_x = \frac{bh^3}{12}$$

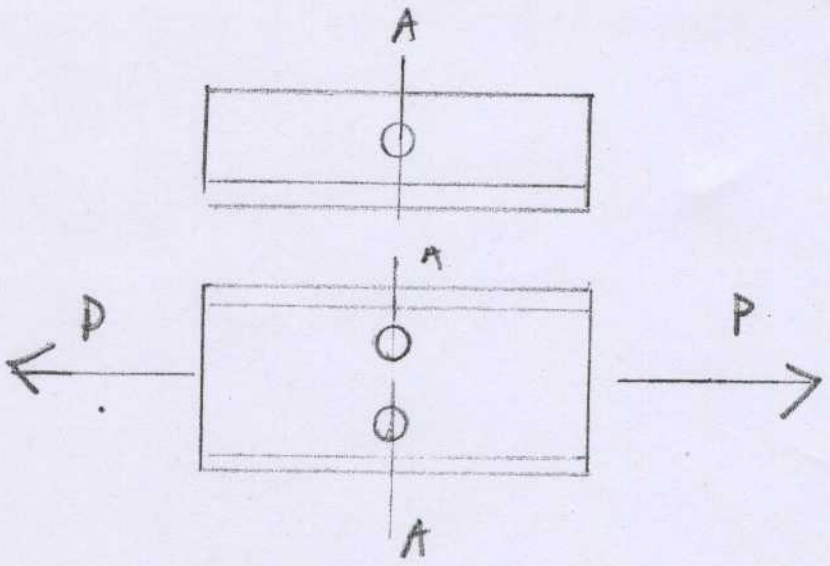
DETERMINE MOMENT OF INERTIA ABOUT COMPOSITE CENTROIDAL X-X AXIS

A = 10

B = 4

C = 8

D = 2



— DETERMINE STRESS @ SECTION A —

NOTES:

P =

HOLE ⌀ = (TYP)

4 HOLES TOTAL

1 IN EACH FLANGE

2 IN WEB

_____ ROD

ϕ =

P =

PROPORTIONAL LIMIT

CALCULATE

stress s

strain ϵ

total elongation δ

$$s = \frac{P}{A}$$

$$A = \frac{\pi d^2}{4}$$

$$E = \frac{s}{\epsilon}$$

$$\epsilon = \frac{\delta}{L}$$

EGR 194

7.16.2008

C10 quiz (in-class)

1. True or False: the modulus of elasticity is also known as the "elastic limit".
2. Would you associate the term yield point with "elasticity" or "plastic range". Circle your answer.
3. Give a synonym for "factor of safety".

4. If I am designing a structural member with an ultimate stress of 55 ksi, using a factor of safety will mean that the stress I design for will be: a) greater than 55 ksi or b) less than 55 ksi. Circle your answer.
5. What does *necking* mean?

6. What does the term "true stress" mean?

7. Kevlar is a material utilized in bullet-proof vests. It has been said that 9 plies will stop a bullet. Which of the following is kevlar's advantage? brittleness, ductility, or toughness. Circle your answer.

8. Consider the example of a rubber band. It's most recognizable property is: strength, toughness, or elasticity? Circle your answer.

9. Define stiffness.