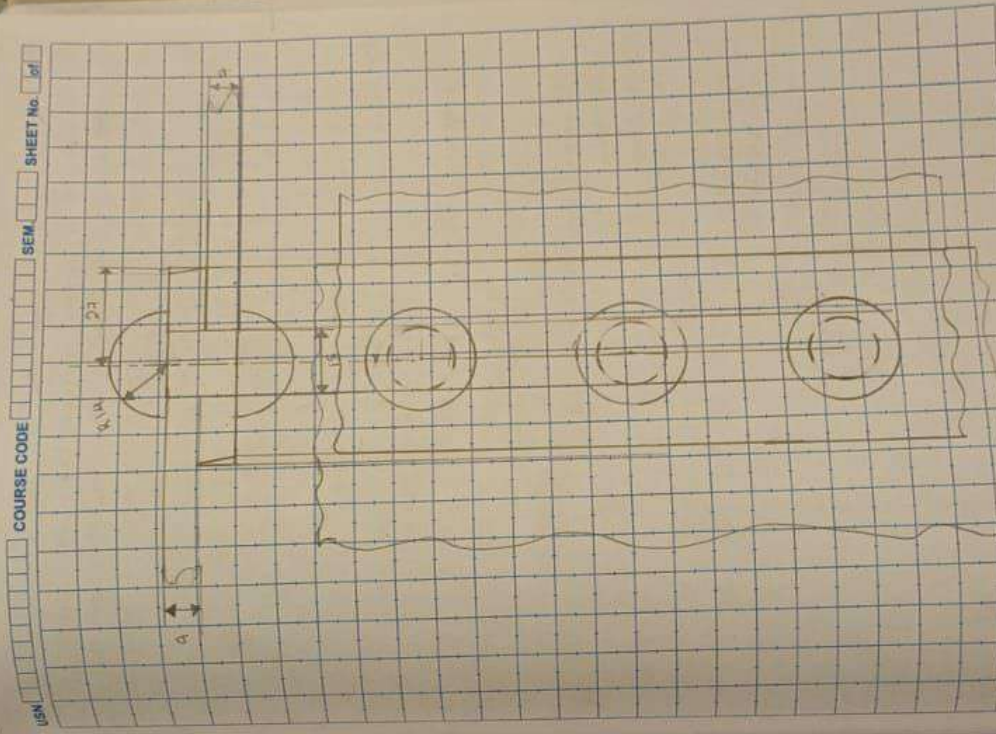


Rivets

Q1) Draw 1:1 scale, the top and front views of a single riveted lap joint. The thickness of the plates is 9 mm. Show atleast 3 rivets. Indicate all the dimensions. Use snap head rivets.

$$\begin{aligned}
 t &= 9 \text{ mm} \\
 d &= 6\sqrt{t} = 6\sqrt{9} = 6 \times 3 = 18 \text{ mm} \\
 \text{pitch} &= 3d = 3 \times 18 = 54 \text{ mm} \\
 \text{margin (m)} &= 1.5d = 1.5 \times 18 = 27 \text{ mm}
 \end{aligned}$$



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$\frac{6 \times 3}{\sqrt{10}} = 1.8$

$$p = 3d = 3 \times 18 = 54 \text{ mm}$$

$$E(X_{S-1}) = p_{S-1} < w$$

| transverse pitch, tp | $0.8 \times p$ | $0.5 \times p$ | $0.3 \times p$ |
|------------------------|----------------|----------------|----------------|
| pitch, p | $0.8 \times p$ | $0.5 \times p$ | $0.3 \times p$ |

diagonal pitch, $d_p = 0.8 + p$

33-24

Scaled down to 1:2

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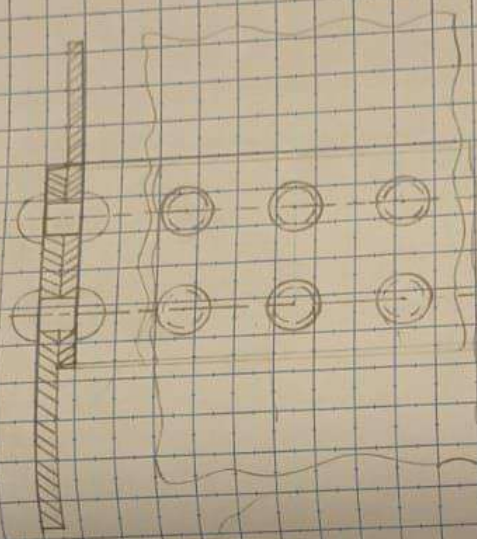
$$9 = 1 + 8$$

$$m = 13.5 \text{ mm}$$

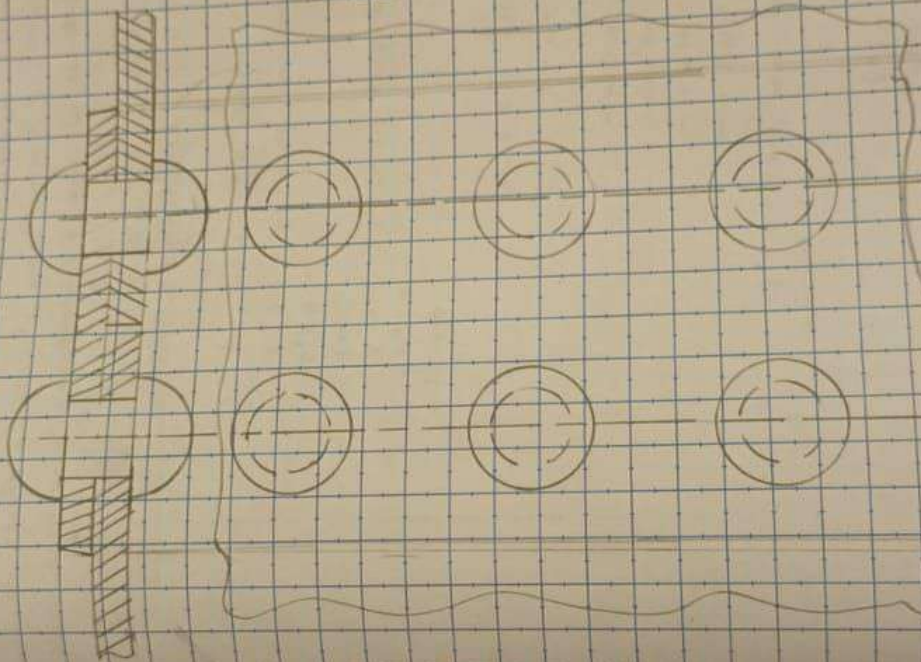
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10

T
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Single Given Plate



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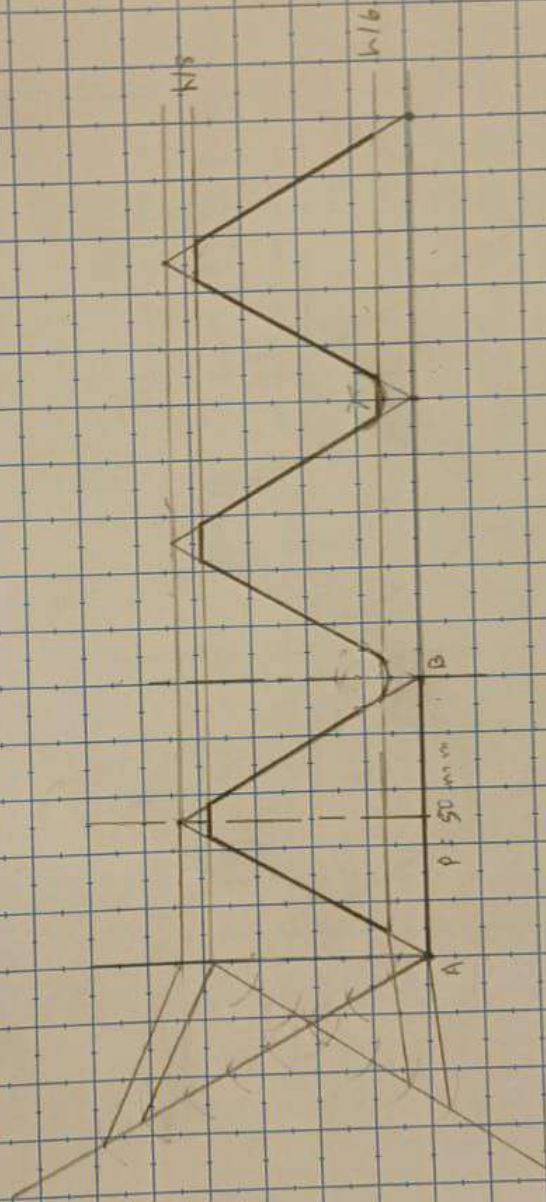
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I. S. O (External)



te: _____

Scale : 1 Unit = 10 mm

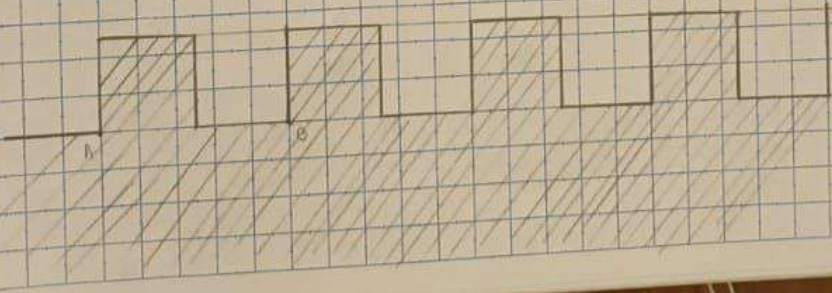
STAFF SIGNATURE _____

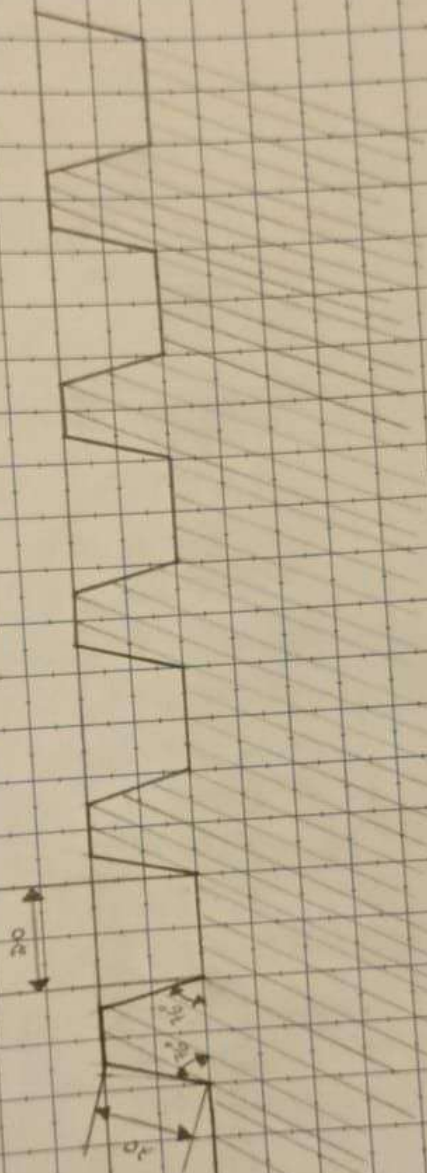


Q.2) Draw a square and cone thread for a pitch of 50 mm

Square
 $K = 0.5 \pi P$
 $W = 0.5 \pi P$

Q.1) Square



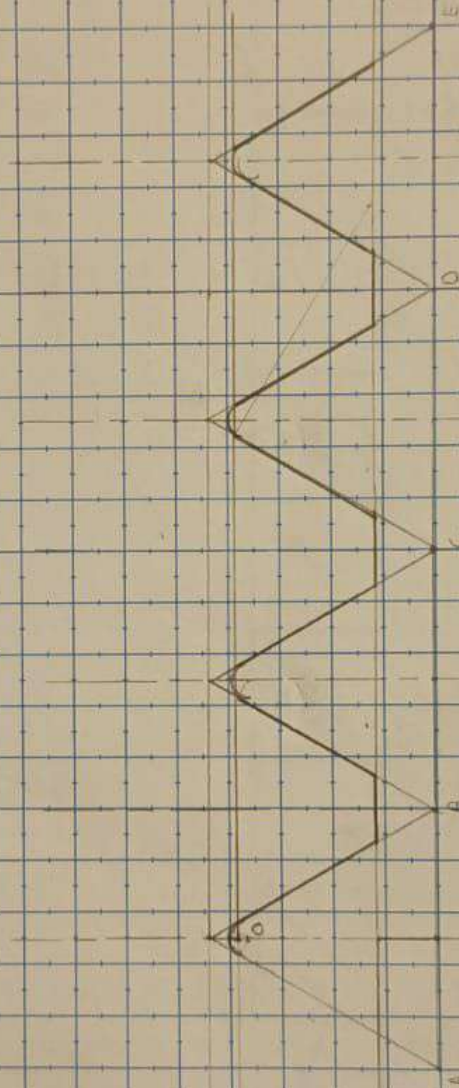


Scale : 1 Unit = 10 mm

STAFF SIGNATURE _____

STAFF SIGNATURE

4) I.S.O (Internal)



Scale : 1 Unit = 10 mm

STAFF SIGNATURE

1)



Date : _____

Scale : 1 Unit = 10 mm

STAFF SIGNATURE

Bull Joint Rivets

8) Draw to 1:1 scale the top and sectional front views of a ~~single~~ double riveted butt joint with i) single cover plate and ii) double cover plate. The thickness of the plates is 9 mm. Show at least 3 rivets in each row, indicate all the dimensions. Use snap head rivets.

$t = 9 \text{ m m}$

$$d > 6\sqrt{t} = 6\sqrt{9} = 6 \times 3 = 18 \text{ mm}$$

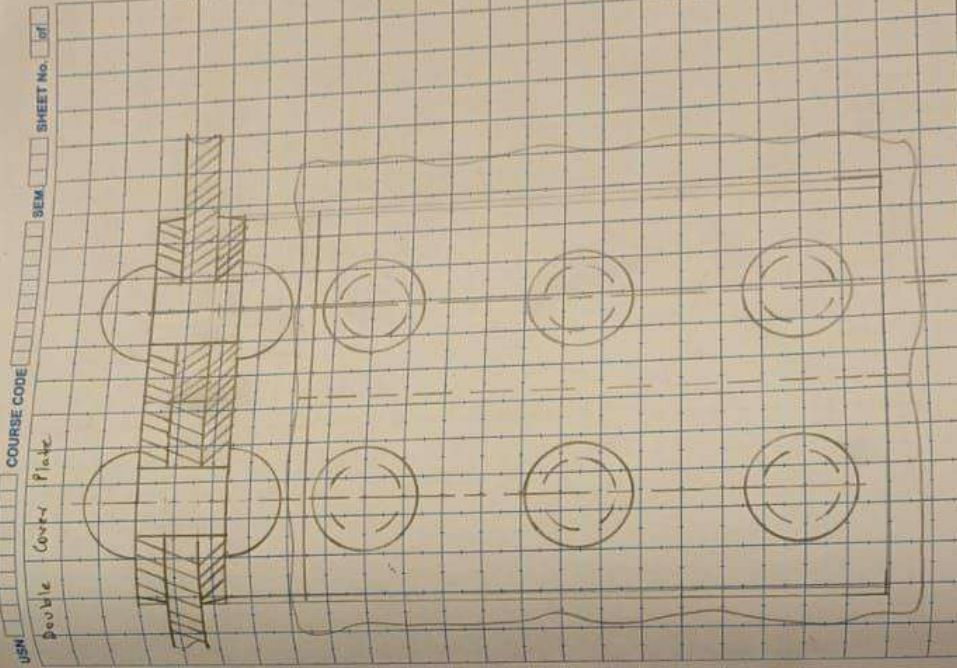
$p = 3d = 3 \times 18 = 54 \text{ mm}$

$$m = 15^{\circ} \text{d} = 15 \times 49 = 735 \text{ mm}$$

$$b_p = 0.8^+ \phi = 43.2 \text{ mm}$$

t. of cover plate = $0.5^* \frac{1}{16}$

$$= 0.8 \times 9 = 7.2 \text{ mm}$$



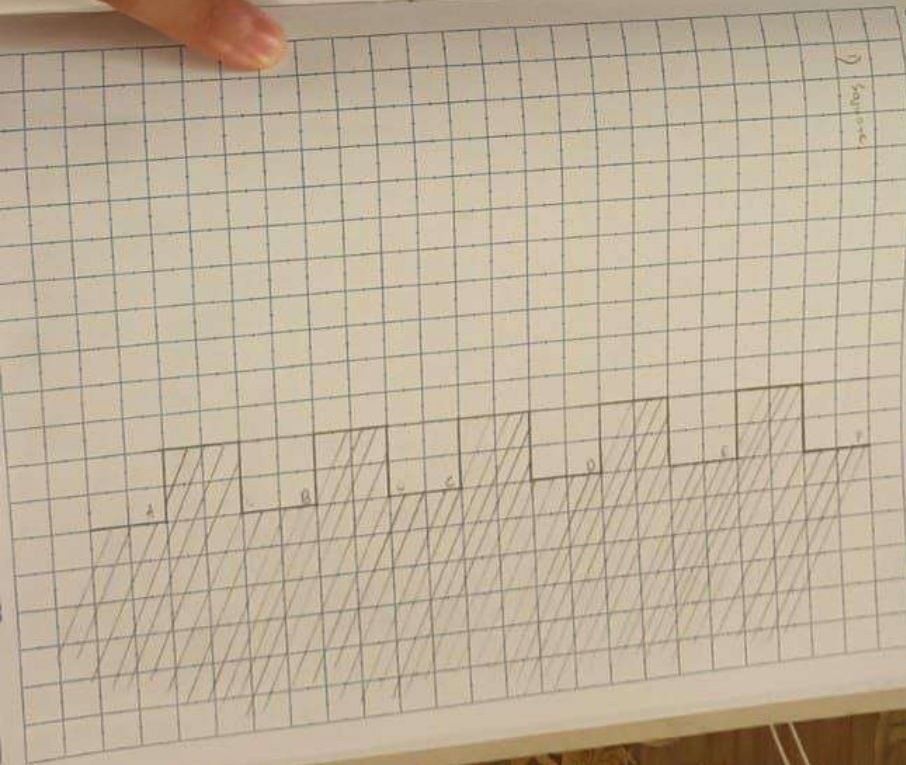
52) Draw a square, circle, rectangle, triangle for a picture of

Butterfly
 $h = 0.6131 \times p$

Circle
 $w = 0.3407 \times p$
 $h = 0.5 \times p$

sq

USN COURSE CODE SEM SHEET No. of



3) Indian Standard Thread (I.S.D Thread) (External)
Angle - 60°

Angle - 60°

I.S.O Thread (Internal

USN [] [] [] [] [] [] [] [] [] [] COURSE CODE [] []

2) American Standard

STANDARD FORMS OF V THREADS

- 1) WHITWORTH THREAD - BRITISH STANDARD WHITWORTH
THREAD
[BSW]

Discovered by Sir Joseph Whitworth

Angle - 55°

- a) Draw the profile of 3 types of V Thread of pitch 50 mm. Indicate the angle and depth of the thread. Name the thread profile.

$$\begin{aligned} H &= 0.93 \times P \\ &= 0.93 \times 50 \\ &= 46.5 \end{aligned}$$

- 2) SELLER'S THREAD - AMERICAN STANDARD THREAD
Angle - 60°

Root and Crest are flat

$$h = 0.86 \times P$$