CE 1102

Computer Aided Engineering Drawing

Contact Hours : 3
Credit: 1.5

Presented by-
Muaz Bin Ali
Lecturer
Department of CE, MEC

Reference Books

- Beginner's Guide to Engineering drawing
  - Enamur Rahman Latifee
- Text Book of Engineering Drawing
  - K Venkata Reddy

EVALUATION PROCESS

Continuous Assessment (40)	**Attendance = 10**
	Lab Reports = 20
	CT/ Presentation = 10
Final Exam (60)	Written Exam = 40
	Viva = 20
Total	100 points

Drawing

- Describing any object/ information diagrammatically

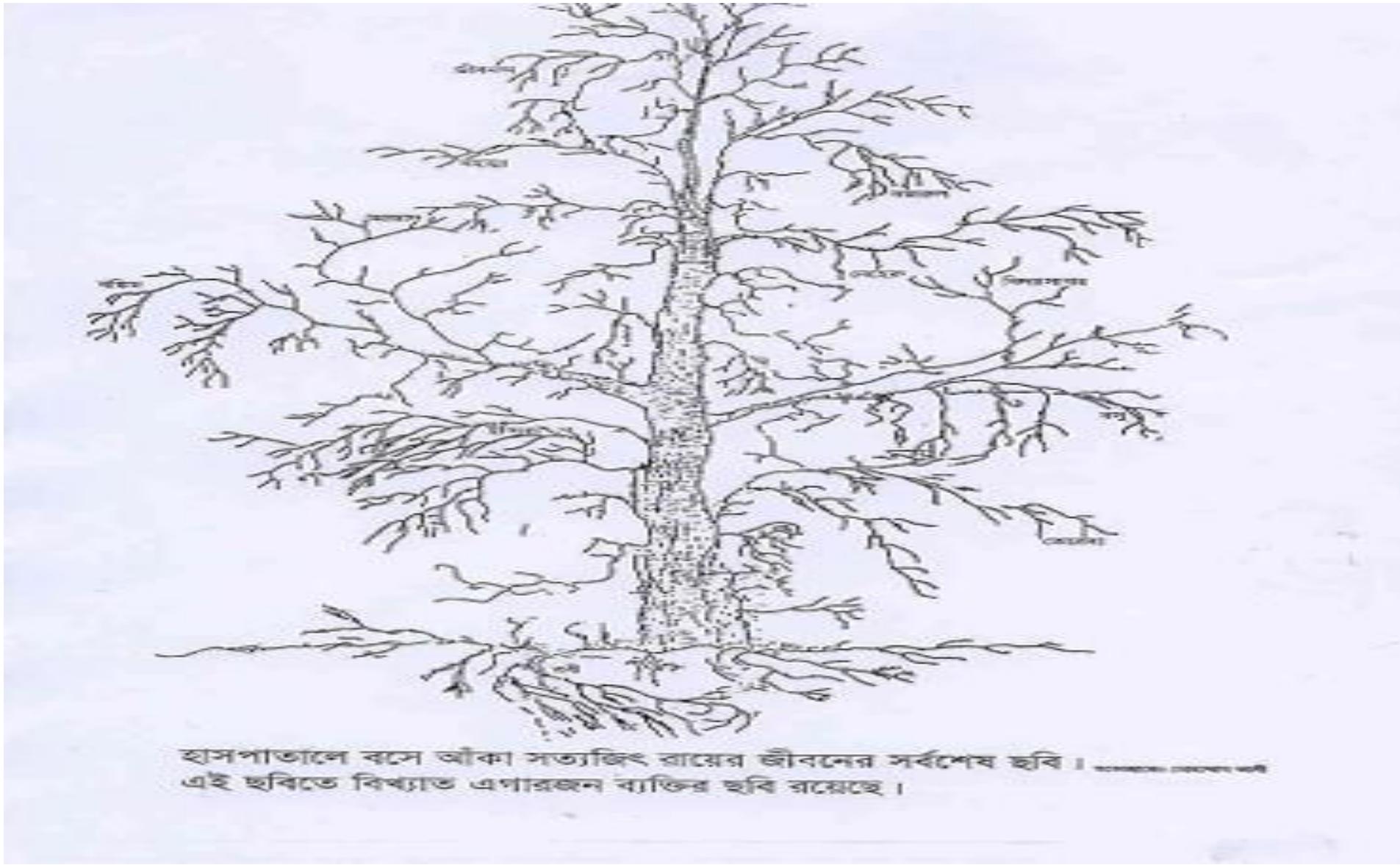
- A **Graphical representation** of an idea, a concept or an entity which actually or potentially exists in life.

Types of Drawings

- Artistic Drawings
- Technical/Engineering Drawings

Artistic Drawing

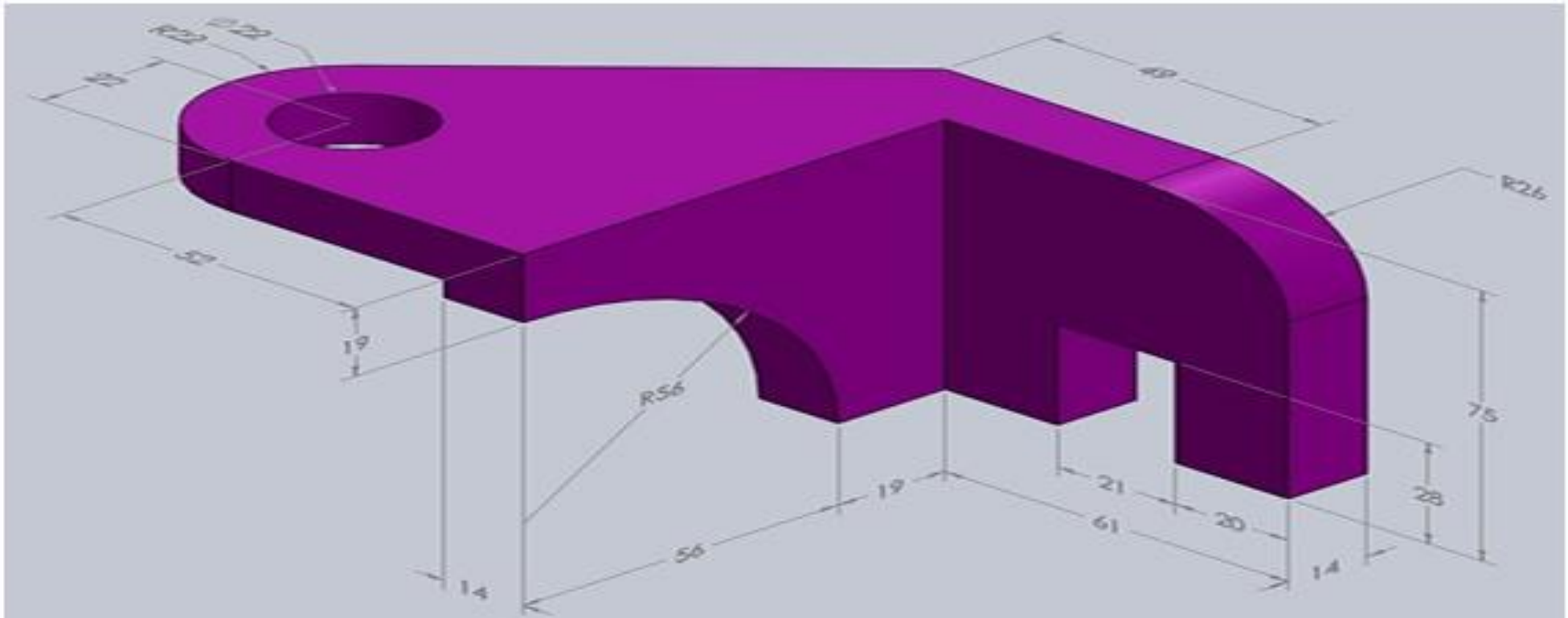
- Used to express the feelings, beliefs, philosophies or abstract ideas of the **artist.**
- **Sometimes difficult to understand** what is being communicated by a work of art.



হাসপাতালে বসে আঁকা সত্যজিৎ রায়ের জীবনের সর্বশেষ ছবি। [illegible]
এই ছবিতে বিখ্যাত এগারজন ব্যক্তির ছবি রয়েছে।

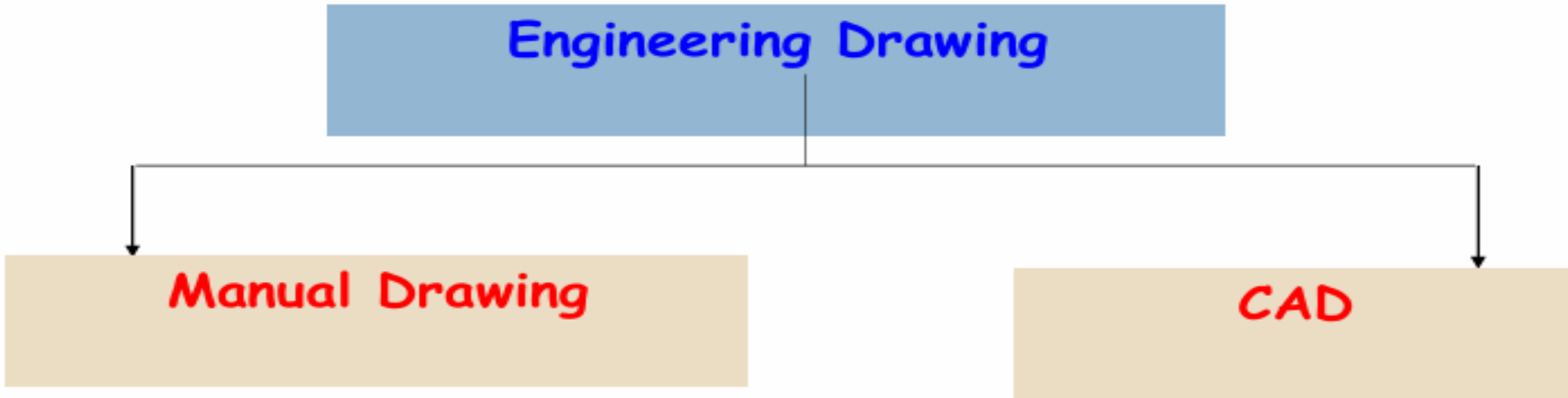
Engineering Drawing

- Clearly and concisely communicating **all of the information necessary** to transform an idea or a concept to reality.
- Engineering drawing of an object should contain all information like **actual shape**, accurate size etc.



Engineering Drawing

- Universal language for engineers
- Drawing is important for all branches of engineering.
- An engineering drawing is worth a thousand words.
- Drawings are the road maps which show how to build/manufacture structures and products.



Computer has a major impact for the creation of technical drawings.

Design and drafting on computer are cheap and less time consuming.

Why we go for manual drawing?

Computer cannot replace the drafting board and equipment as a learning tool.

Once you have learned the basics of mathematics, you are allowed the use of calculator and computer.

If basic fundamentals are clear, better use can be made by the power of the software.

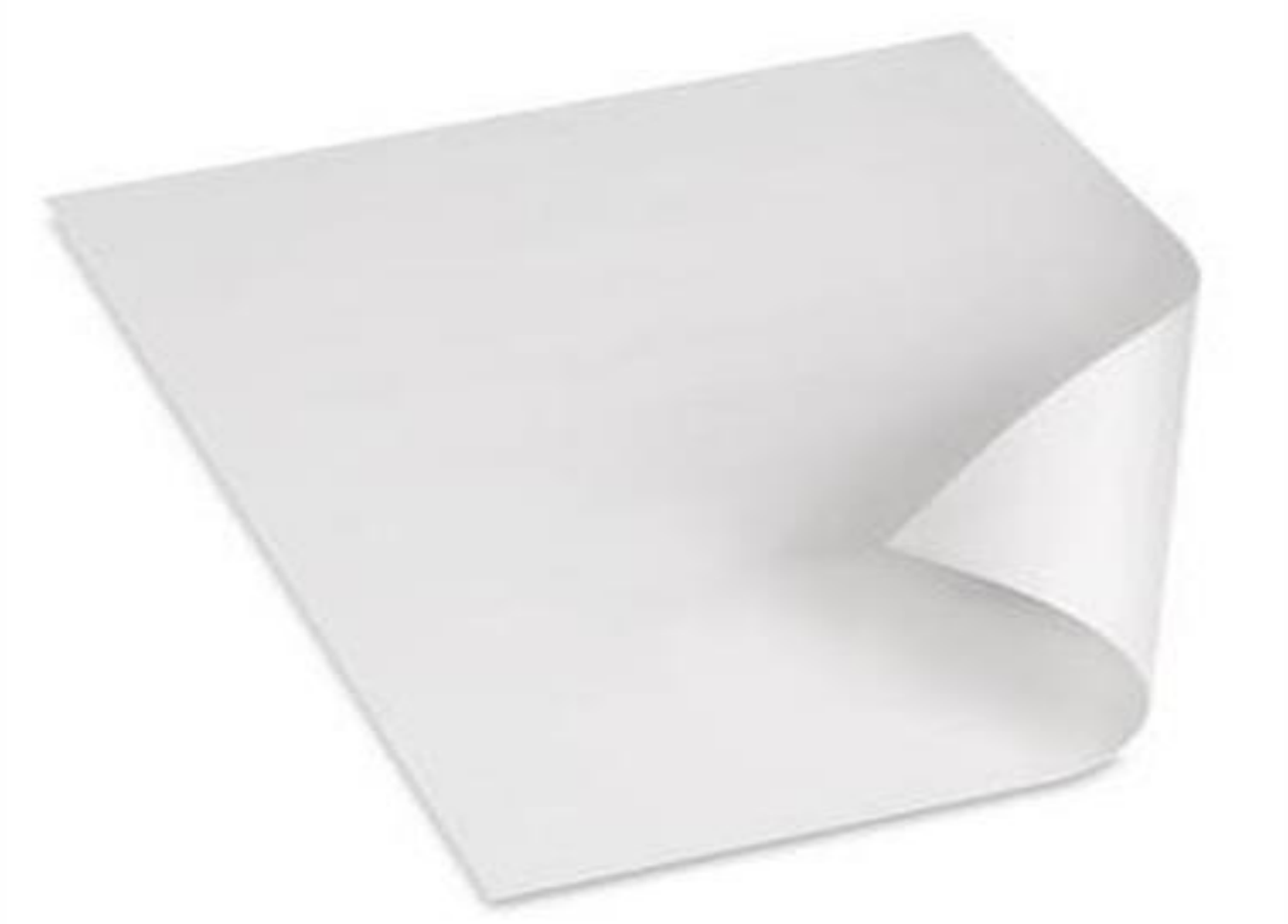
To be an expert in technical drawing, this first course on Engineering (manual) Drawing is the first step.

Drawing Equipments

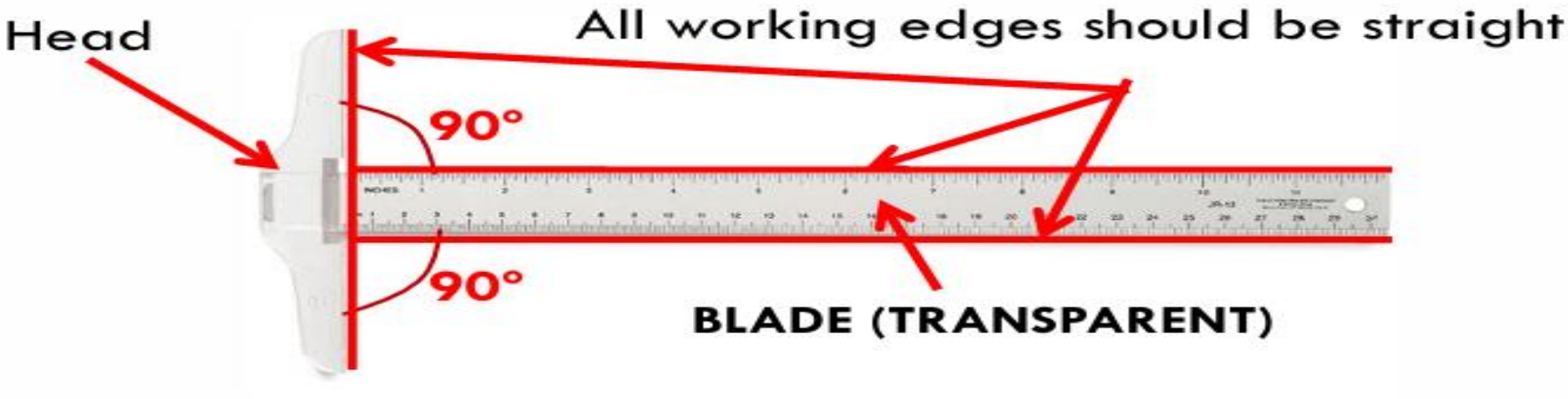
- Drawing Board-(36in×24in)
- Drawing Paper-(28in×22in)
- T-square
- 45° triangle
- 30°-60° triangle
- Bow compass
- Divider
- Pencils (HB and 2H)
- Eraser
- Scotch Tape

Drawing Board

Drawing Paper

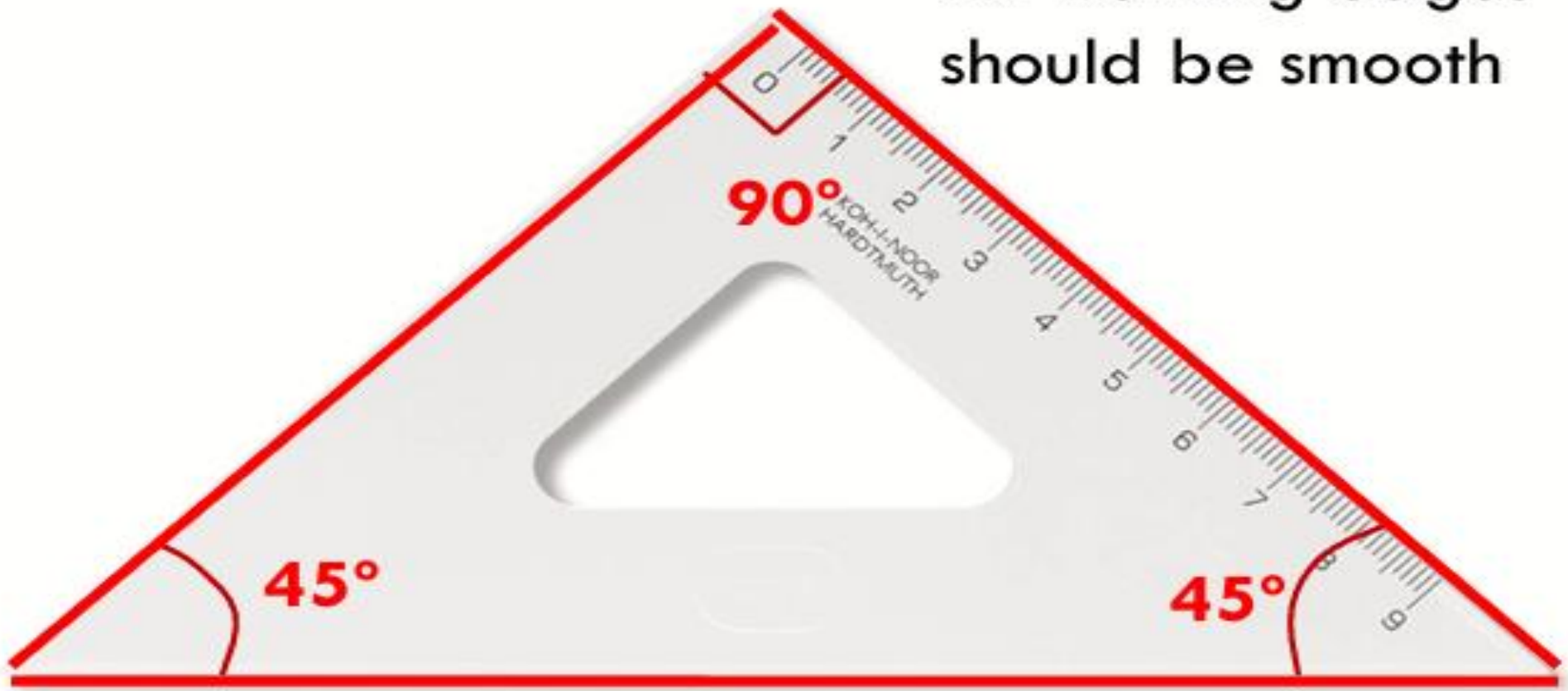


T-square

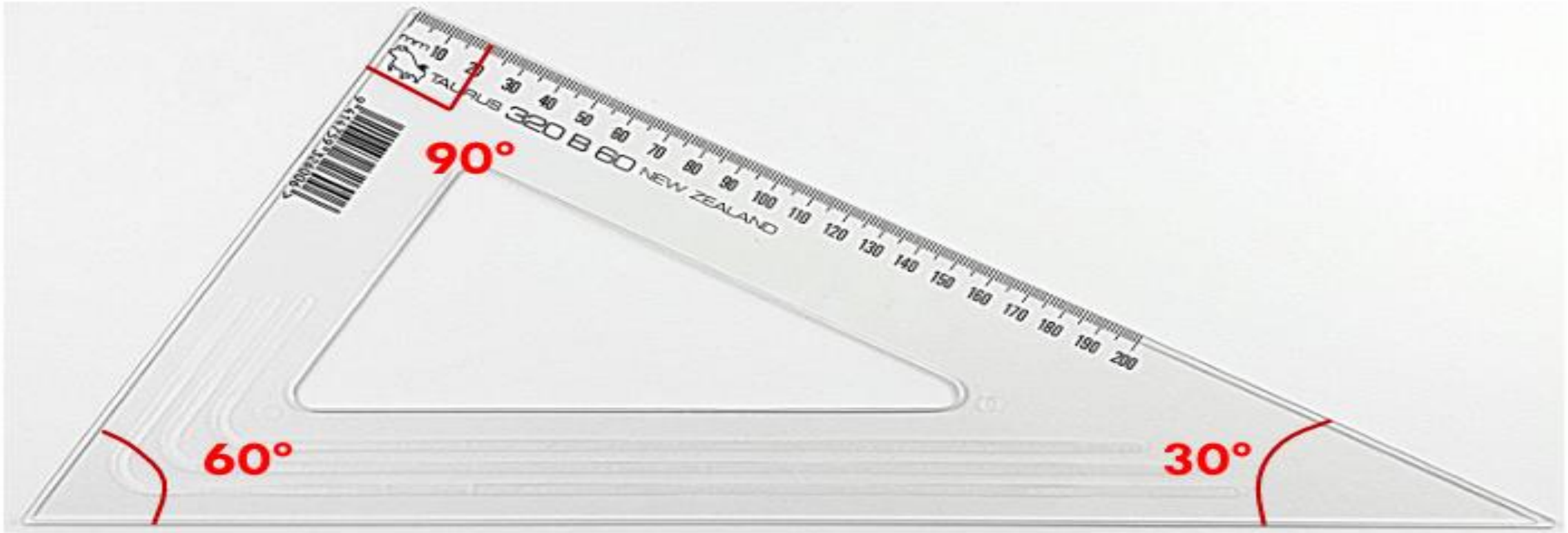

Head
All working edges should be straight
90°
90°
BLADE (TRANSPARENT)

45° triangle

All working edges should be smooth

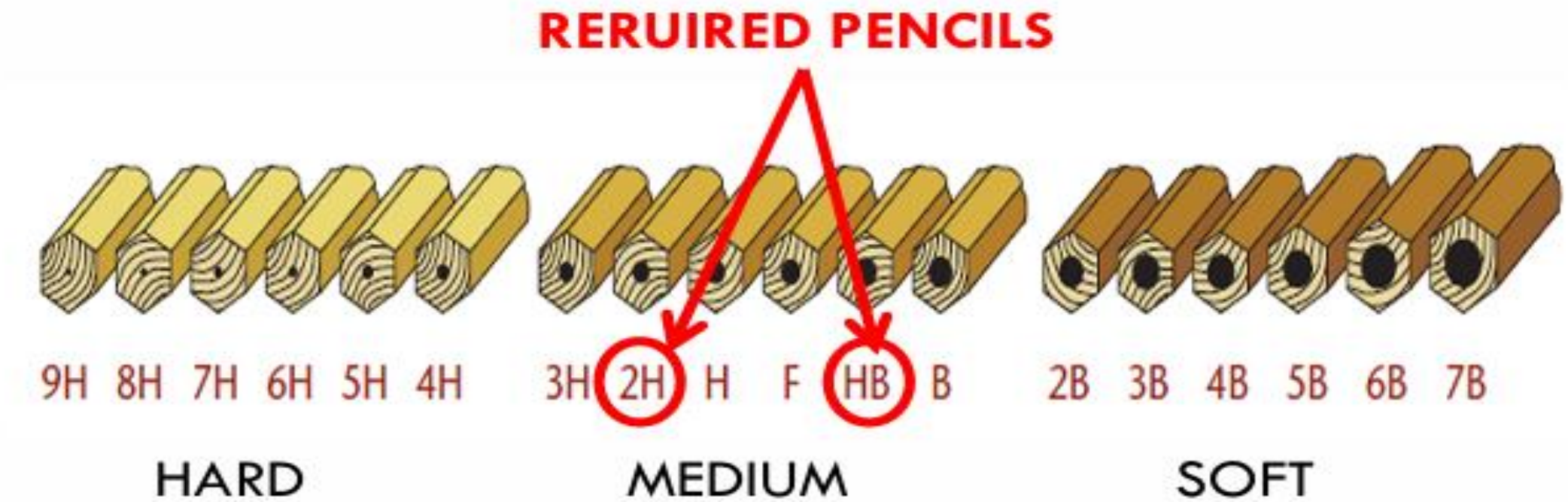


30°-60° triangle



Bow compass And Divider

Pencils



GRADES OF PENCIL LEAD

Eraser And Scotch Tape

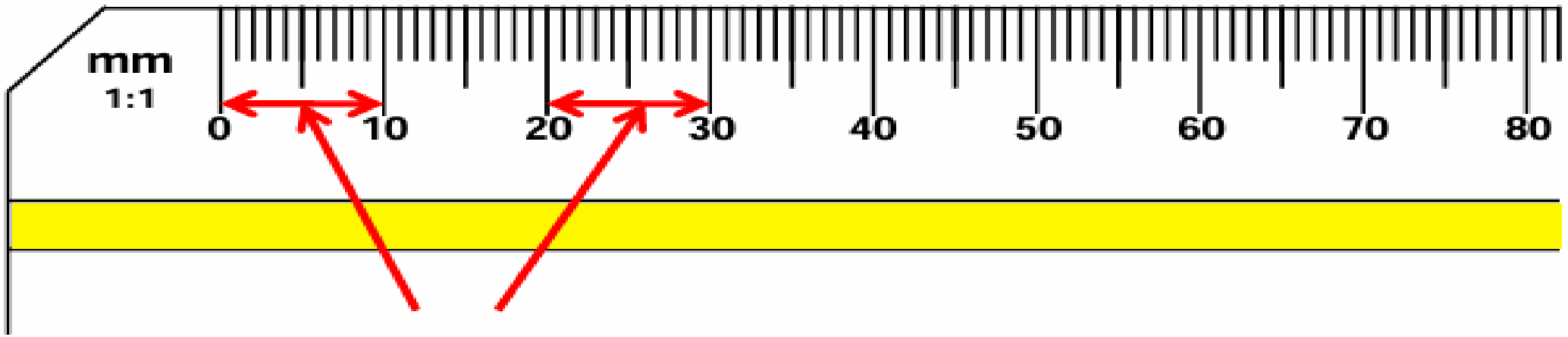
DUST FREE

TRANSPARENT

Scales

- **METRIC SCALE**
- **CIVIL ENGINEER SCALE**
- **ARCHITECT SCALE**

METRIC SCALE

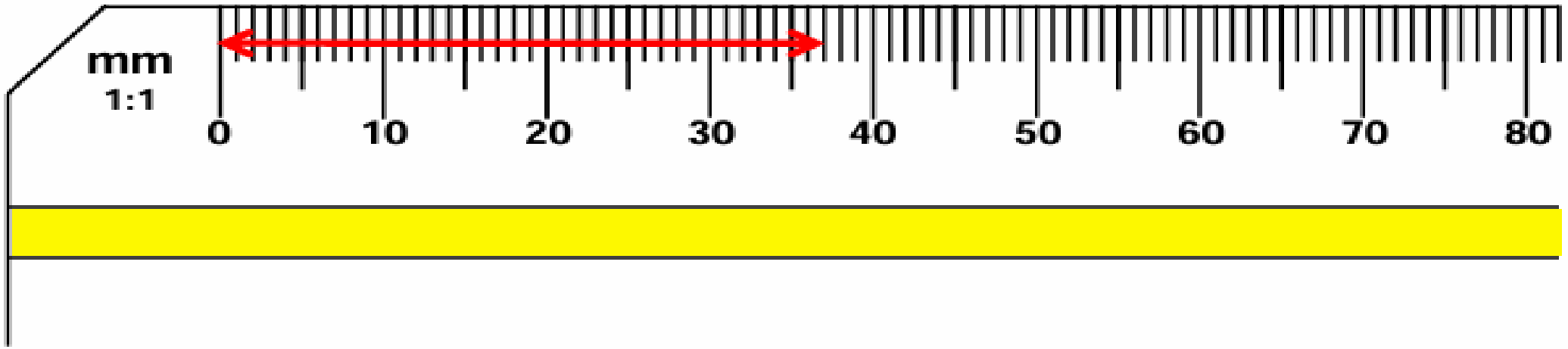


No. of Division = 10

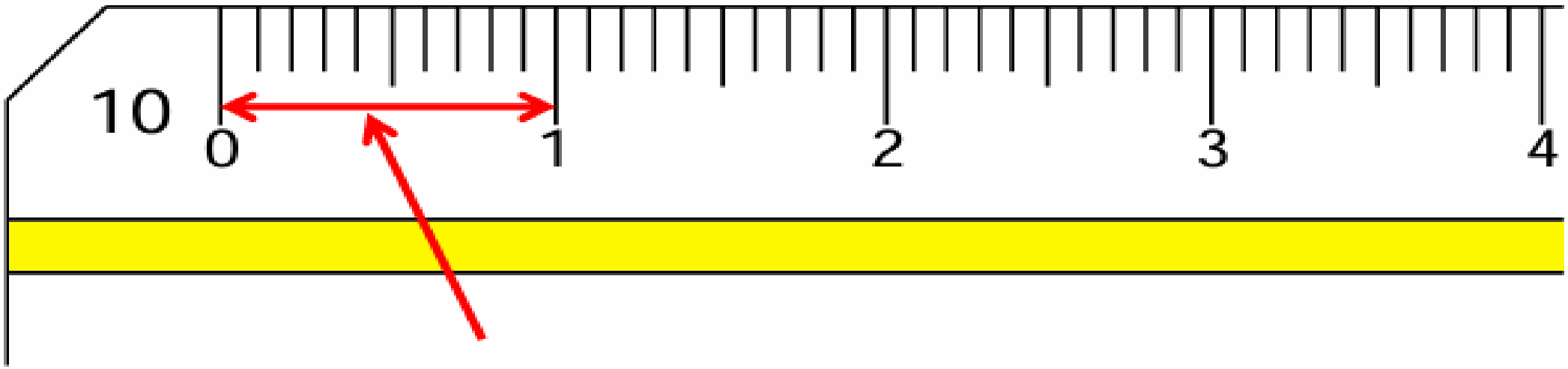
Each division = 1 mm = 0.1 cm

METRIC SCALE

So, how 37 mm or 3.7 cm can be measured?



CIVIL ENGINEER SCALE

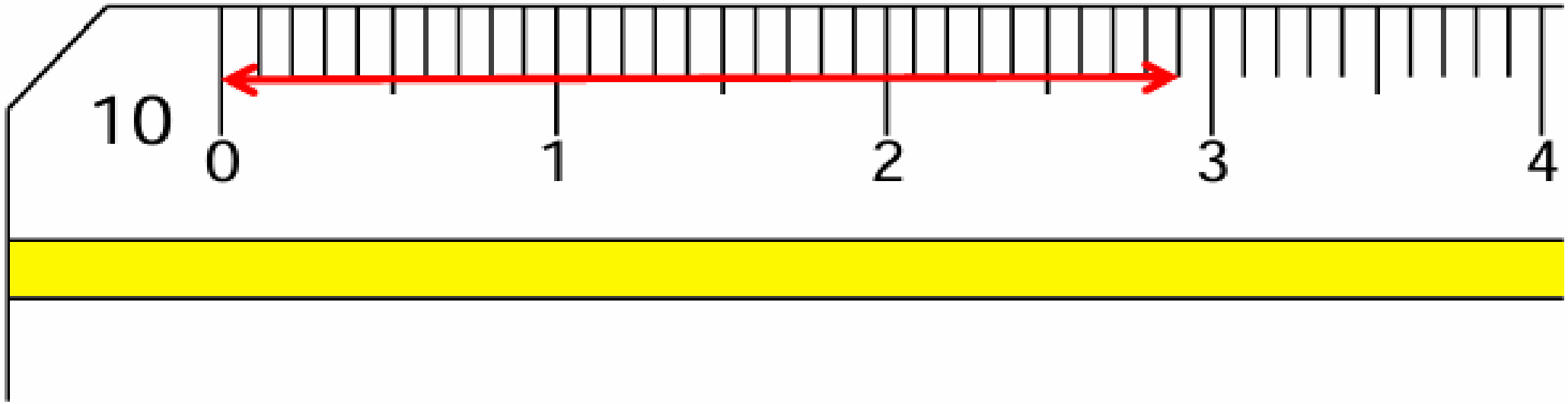


No. of Division = 10

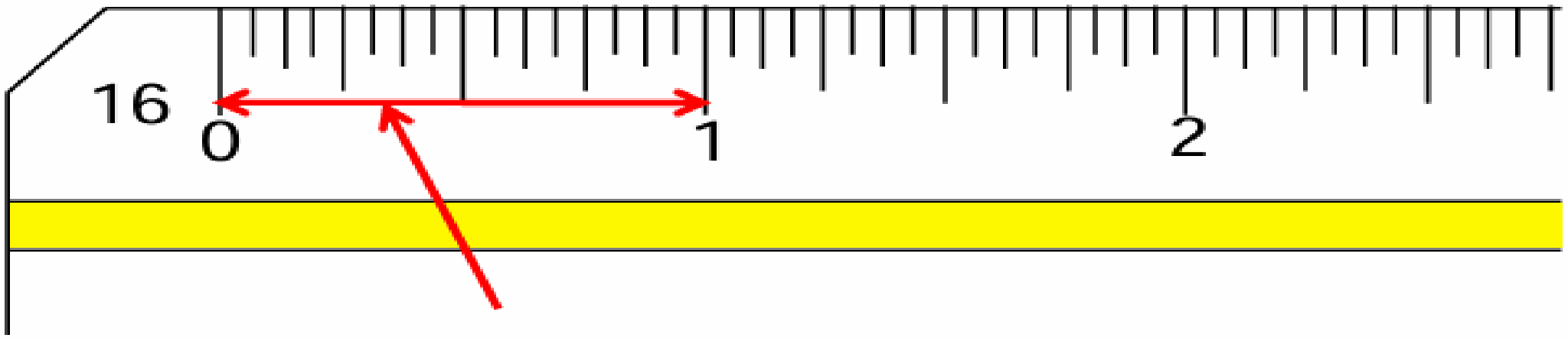
Each division = 0.1 in

CIVIL ENGINEER SCALE

So, how 2.9 in can be measured?



ARCHITECT SCALE



No. of Division = 16

Each division = $\frac{1}{16}$ in

ARCHITECT SCALE

1 small division = $\frac{1}{16}$in

2 small division = $\frac{1}{8}$in

3 small division = $\frac{3}{16}$in

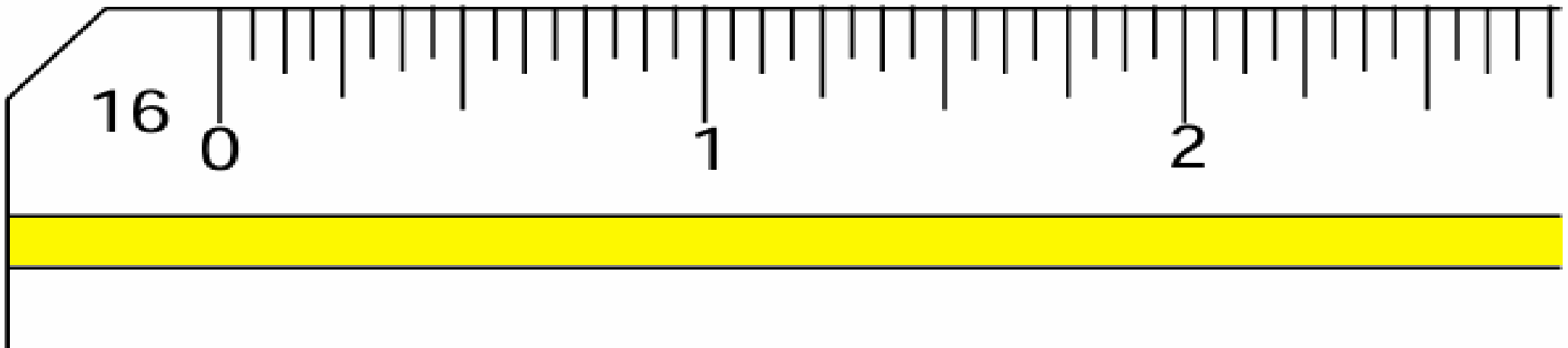
4 small division = $\frac{1}{4}$in

5 small division = $\frac{5}{16}$in

6 small division = $\frac{3}{8}$in

7 small division = $\frac{7}{16}$in

8 small division = $\frac{1}{2}$in



ARCHITECT SCALE

9 small division = $\frac{9}{16}$ in

10 small division = $\frac{5}{8}$ in

11 small division = $\frac{11}{16}$ in

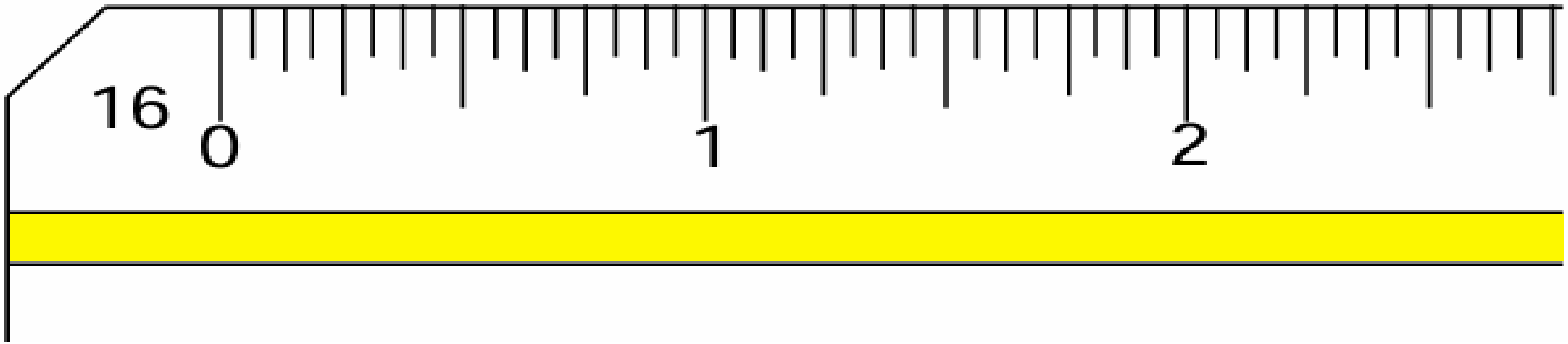
12 small division = $\frac{3}{4}$ in

13 small division = $\frac{13}{16}$ in

14 small division = $\frac{7}{8}$ in

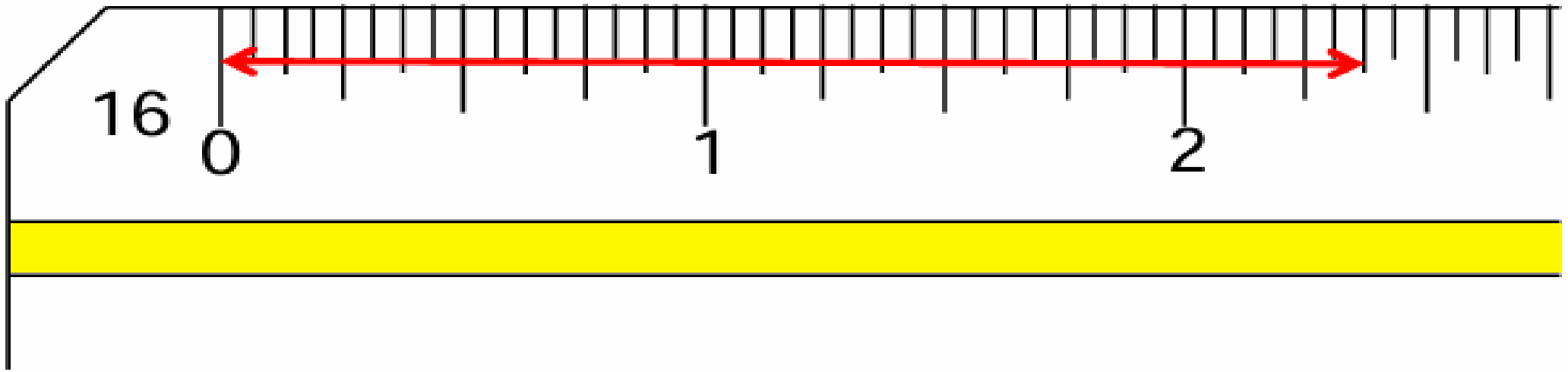
15 small division = $\frac{15}{16}$ in

16 small division = 1 in



ARCHITECT SCALE

So, how $2\frac{3}{8}$ in can be measured?



ARCHITECT SCALE

So, how $1\frac{3}{4}$ in can be measured?