

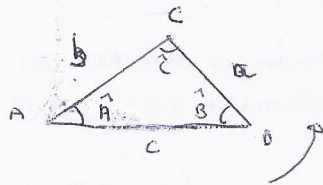
UNIDAD I: LA LÍNEA COMO INSTRUMENTO GEOMÉTRICO

REPASAMOS LAS CONSTRUCCIONES FUNDAMENTALES:

Mediatriz de un segmento. p18	Recta perpendicular a la recta r desde el punto P. p17	Recta perpendicular a la recta r desde el punto P. p17
Recta paralela a la recta r desde el punto P. p17	Recta paralela a la recta r que diste de ella 2 cm.	Dados los ángulos α y β, dibuja los ángulos: $\alpha + \beta$ y $\alpha - \beta$ p22
Bisectriz de un ángulo. (w) p20	División del segmento AB en 7 partes iguales.	División del segmento AB en partes proporcionales a las dadas. homotecia
Triángulo equilátero de lado l.	Triángulo ABC de lados a, b y c dados.	Triángulo ABC de lados a, b y ángulo α dados. p11

Rectas: r, s, t

Puntos: R, A, B, C



sentido contrario reloj

(lado opuesto ángulo)

Ángulos: α, β, γ

16-9-14

CONSTRUIR LOS TRIANGULOS CONOCIENDO LOS SIGUIENTES DATOS:

DIBUJARLOS EN UN FOLIO, EN ORDEN, 10 DELANTE Y 10 DETRÁS.

1. $\times$ $c = 35 \text{ mm}$
 $hb = 30 \text{ mm}$
 $\hat{C} = 45^\circ$

2. $hb = 30 \text{ mm}$
 $\hat{C} = 45^\circ$
 $wc = 30 \text{ mm}$

3. $a = 40 \text{ mm}$
 $b = 20 \text{ mm}$
 $c = 45 \text{ mm}$

4. $a = 40 \text{ mm}$
 $\times \hat{B} = 30^\circ$
 $\hat{A} = 90^\circ$

5. $c = 30 \text{ mm}$
 $hc = 30 \text{ mm}$
 $\hat{B} = 90^\circ$

6. $b = 30 \text{ mm}$
 $\times c = 20 \text{ mm}$
 $\hat{C} = 30^\circ$

7. $b = 40 \text{ mm}$
 $hb = 30 \text{ mm}$
 $c = 35 \text{ mm}$

8. $b = 40 \text{ mm}$
 $\times \hat{B} = 60^\circ$
 $\hat{C} = 45^\circ$

9. $a = 30 \text{ mm}$
 $\hat{C} = 30^\circ$
 $wc = 40 \text{ mm}$

10. $b = 30 \text{ mm}$
 $\times a = 25 \text{ mm}$
 $\hat{A} = 45^\circ$

11. $a = 50 \text{ mm}$
 $\hat{C} = 60^\circ$
 $wc = 40 \text{ mm}$

12. $b = 30 \text{ mm}$
 $\times \hat{A} = 90^\circ$
 $a = 40 \text{ mm}$

13. $ha = 30 \text{ mm}$
 $\hat{C} = 45^\circ$
 $wc = 25 \text{ mm}$

14. $a = 30 \text{ mm}$
 $\times \hat{C} = 30^\circ / 120^\circ$
 $c = 20 \text{ mm}$

15. $b = 35 \text{ mm}$
 $\times \hat{A} = 30^\circ$
 $\hat{B} = 60^\circ / 110^\circ$

16. $a = 30 \text{ mm}$
 $hc = 20 \text{ mm}$
 $\hat{A} = 45^\circ$

17. $c = 40 \text{ mm}$
 $\hat{A} = 45^\circ$
 $\hat{C} = 30^\circ$

18. $a = 35 \text{ mm}$
 $\hat{B} = 45^\circ$
 $wb = 25 \text{ mm}$

19. $ha = 20 \text{ mm}$
 $\hat{C} = 60^\circ$
 $c = 30 \text{ mm}$

20. $hb = 20 \text{ mm}$
 $\hat{A} = 60^\circ$
 $wa = 30 \text{ mm}$

RECTAS Y PUNTOS NOTABLES (p. 49)

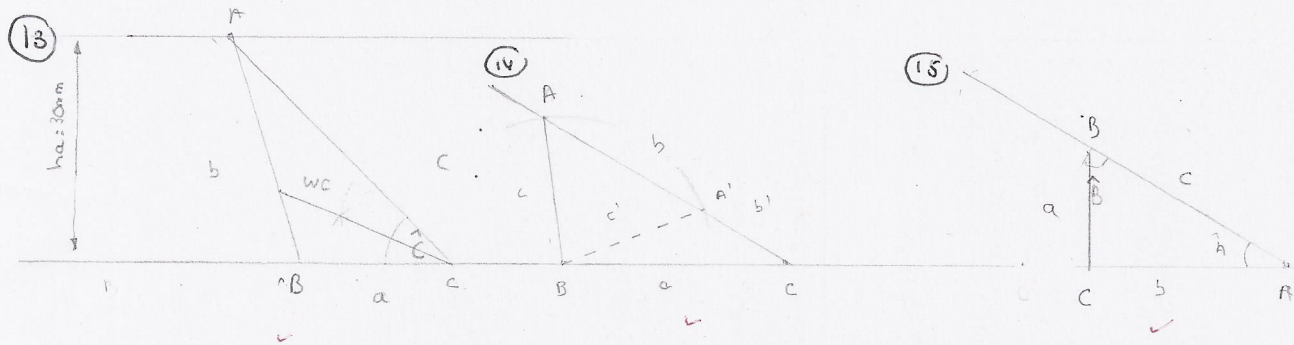
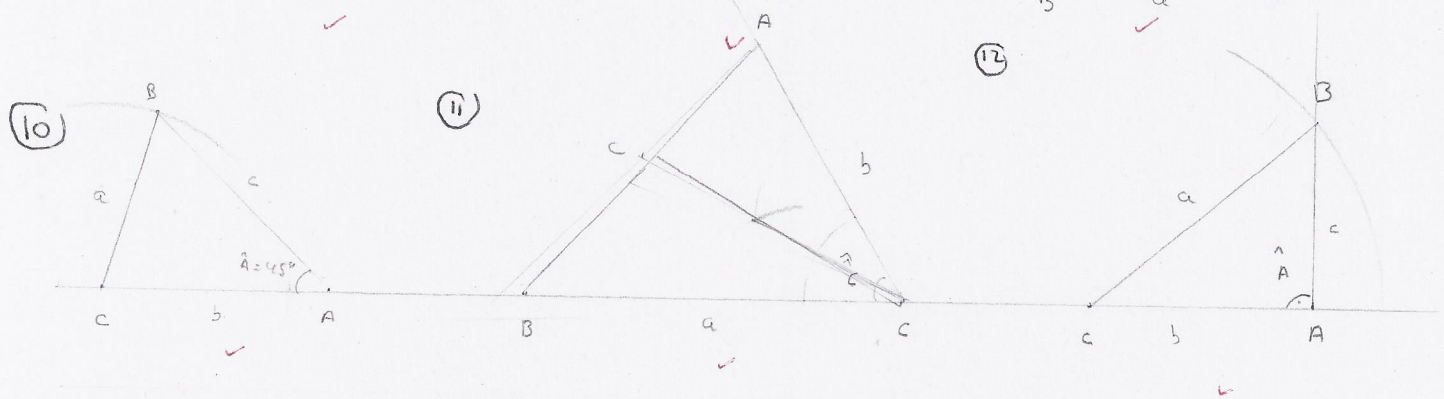
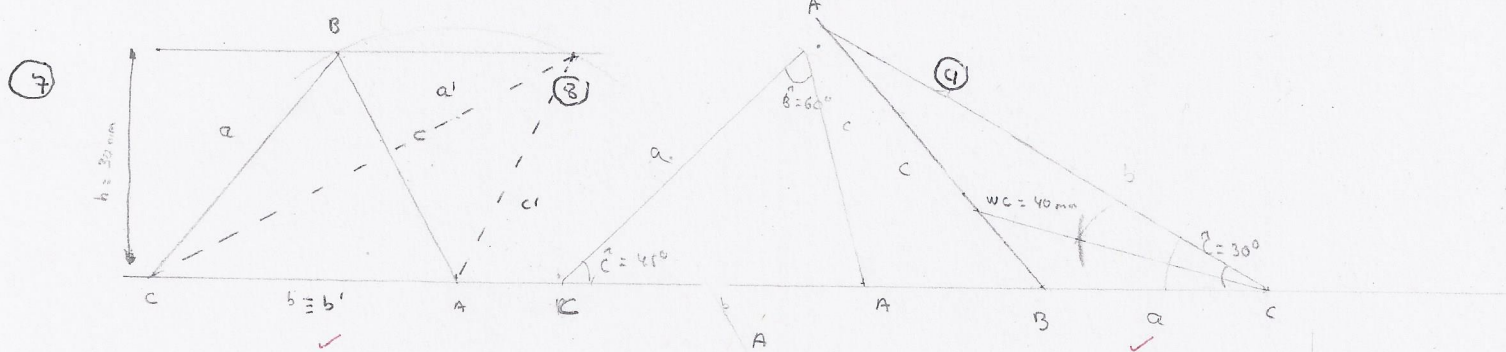
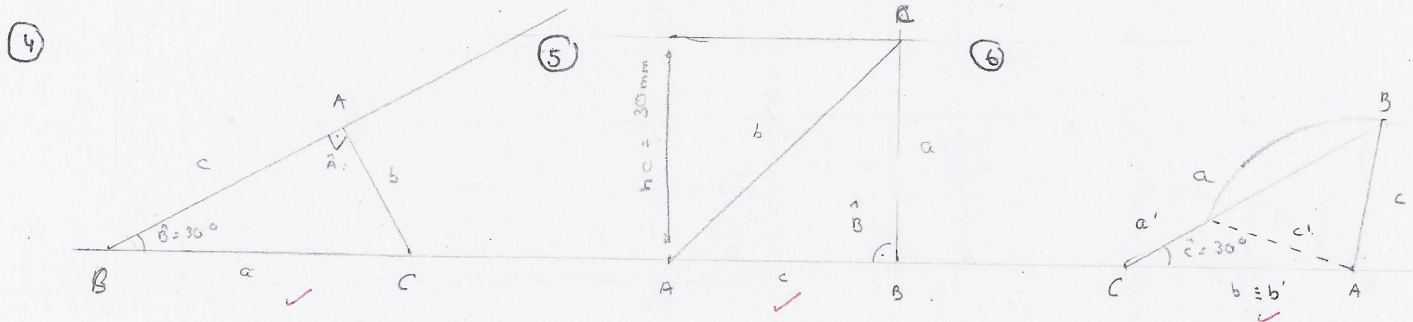
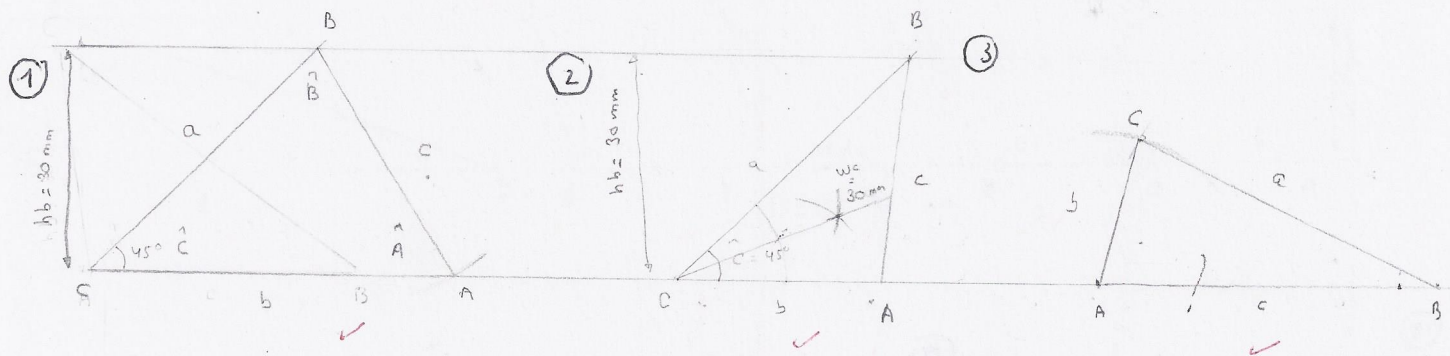
Mediatriz: punto medio del lado $\Rightarrow$ Circuncentro

Bisectriz: mitad del ángulo $\Rightarrow$ Incentro

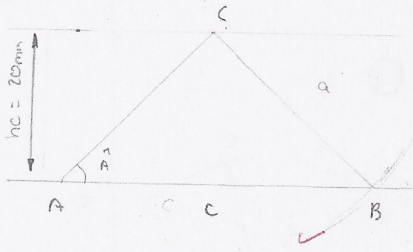
Alturas: $\Rightarrow$ Ortocentro

Mediana: del vértice al pto medio del lado opuesto $\Rightarrow$ Baricentro: centro de gravedad

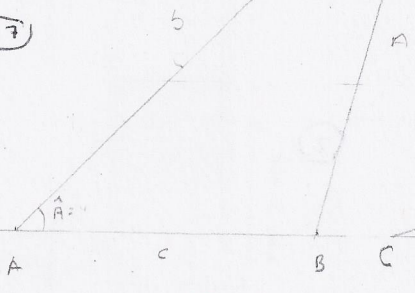
16-9-14



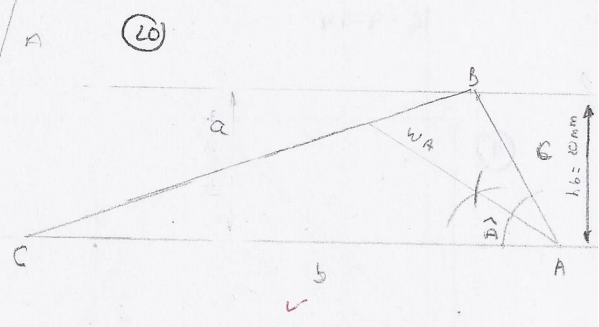
16



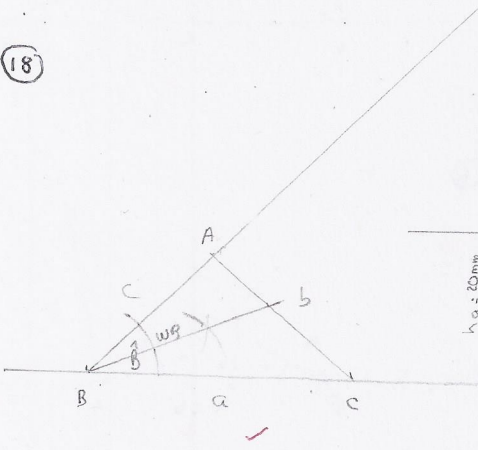
17



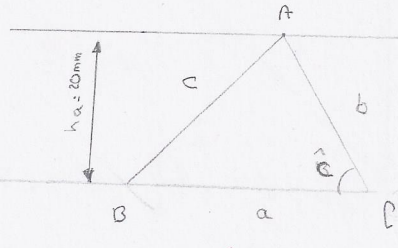
20



18



19



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ARCO CAPAZ

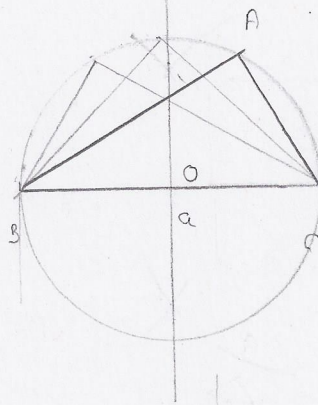
(res p 28)

(ajo bajo triángulos)

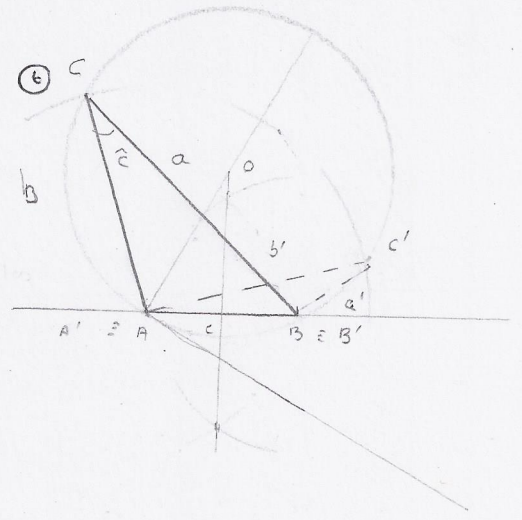
lugares geo de un conjunto de pto q cumplen
la propiedad de tener un ángulo frente
a un radio

(con solo 2 datos, sin B, valdrían todos)

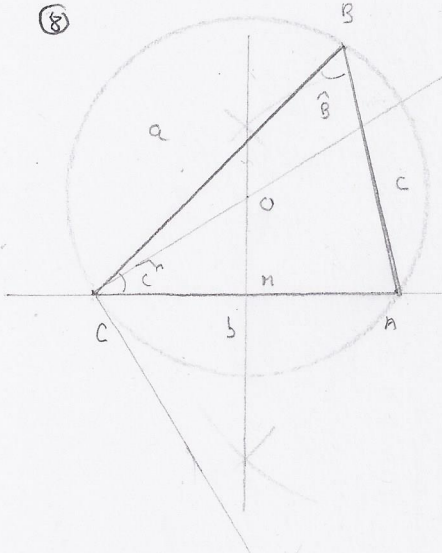
(4)



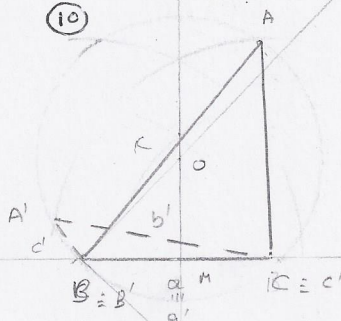
(6)



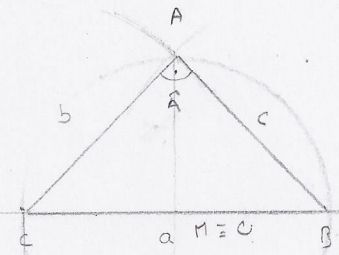
(8)



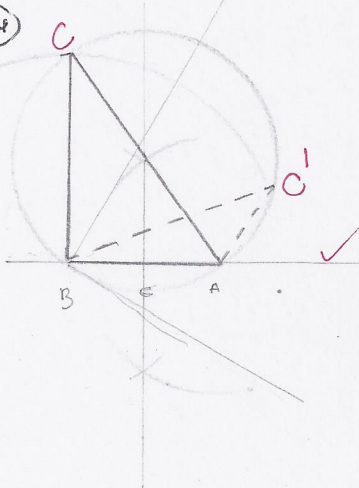
(10)



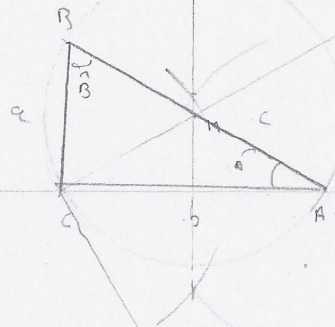
(12)



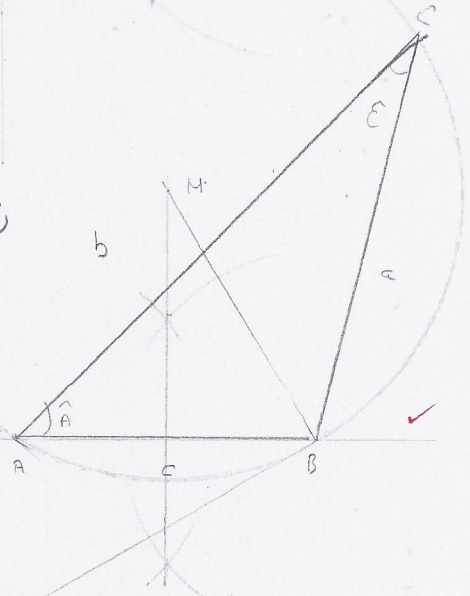
(14)



(15)



(17)



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p49

(Fig 14p51)

Hip: 80 mm

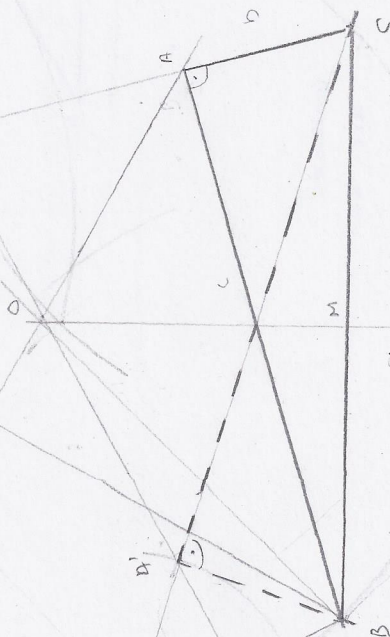
Suma catetos: 100 mm

Como largo 2 lados,

pongo en el compás

la mitad

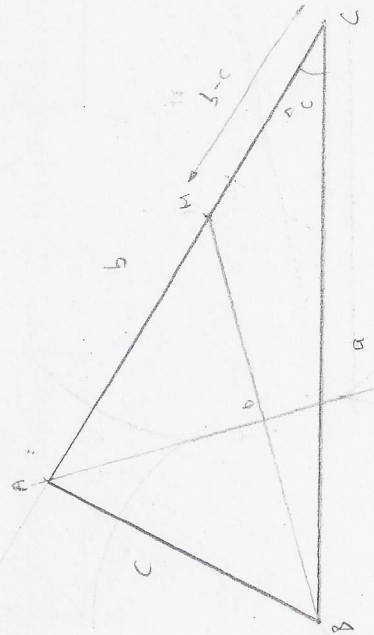
b+c



$a = 80 \text{ mm}$

$\hat{C} = 30^\circ$

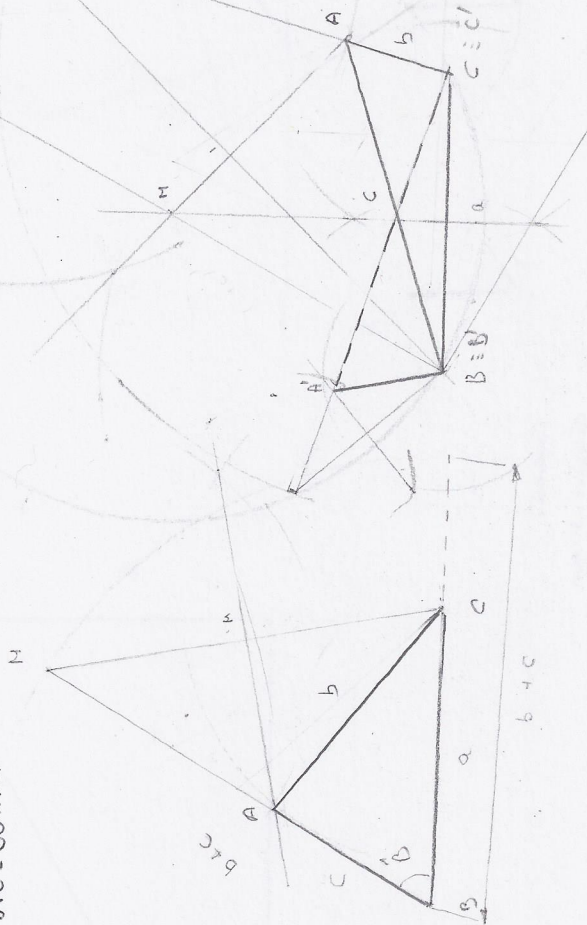
$b+c = 35 \text{ mm}$



$a = 40 \text{ mm}$

$\hat{A} = 60^\circ$

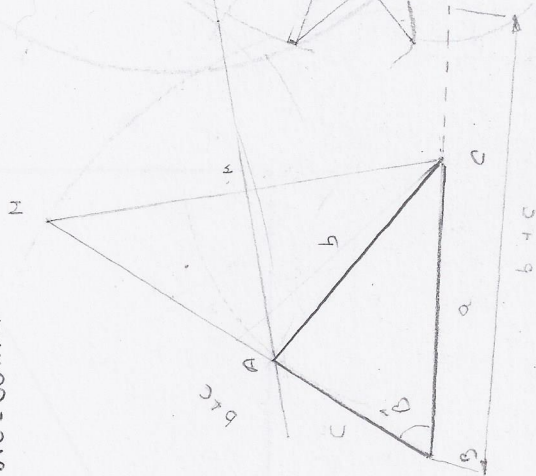
$b+c = 75 \text{ mm}$



$a = 40 \text{ mm}$

$\hat{B} = 60^\circ$

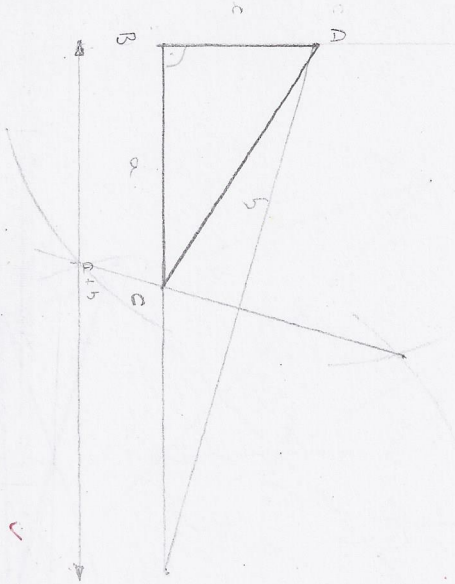
$b+c = 60 \text{ mm}$



ps 2
C = 20 mm

a+b = 10 mm

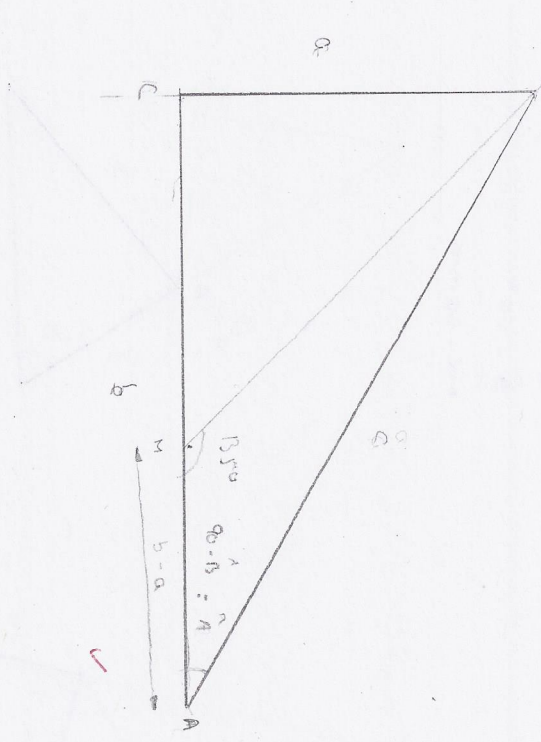
Rectangle



$\hat{B} = 60^\circ$

b - a = 35 mm

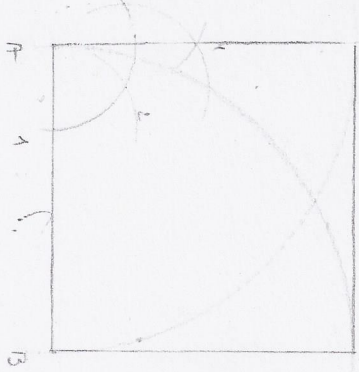
Rectangle



ps 4

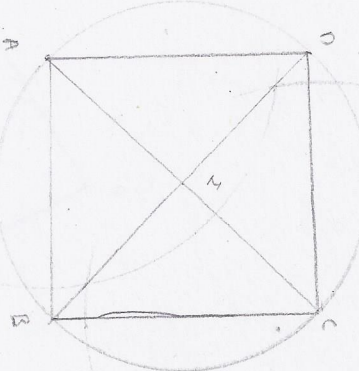
Quadrato

l = 40 mm



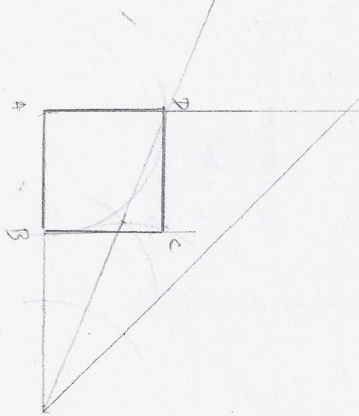
Quadrato

diagonale = 50 mm



Quadrato

d+l = 40 mm



(note to per
medality)

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24-07-14

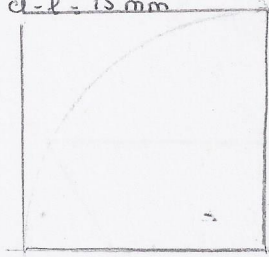
p57

Rectángulo

$L = 20 \text{ mm}$

$P = 30 \text{ mm}$

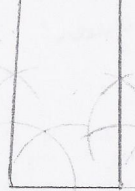
$d-l = 15 \text{ mm}$



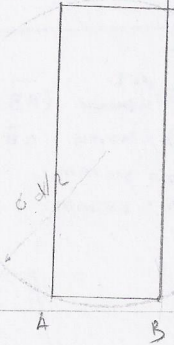
Rectángulo

$l = 15 \text{ mm}$

$d = 40 \text{ mm}$



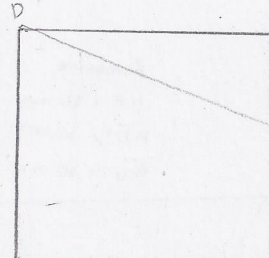
$d-l$



Rectángulo

$d+l = 80 \text{ mm}$

$l = 30 \text{ mm}$

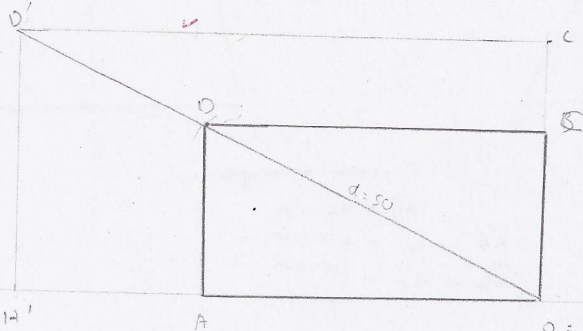


Rectángulo

$l+l = 10 \text{ mm}$

$d = 50 \text{ mm}$

$\frac{d+l}{2}$



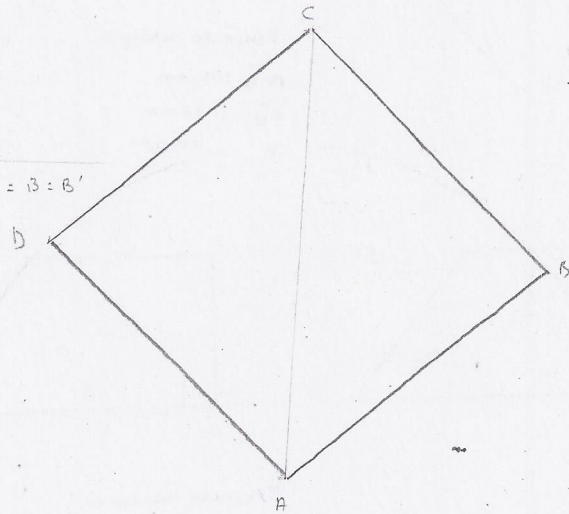
Rombu

$a_1 = 60 \text{ mm}$

$l = 45 \text{ mm}$

$AB = BC = CD = DA$

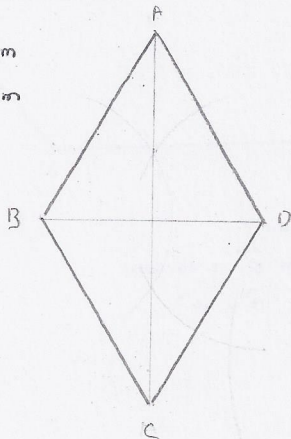
$AC \neq BD$



Rombu

$AC = 50 \text{ mm}$

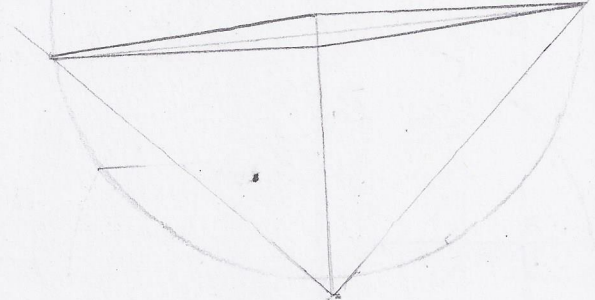
$BD = 30 \text{ mm}$



Rombu

$l = 35 \text{ mm}$

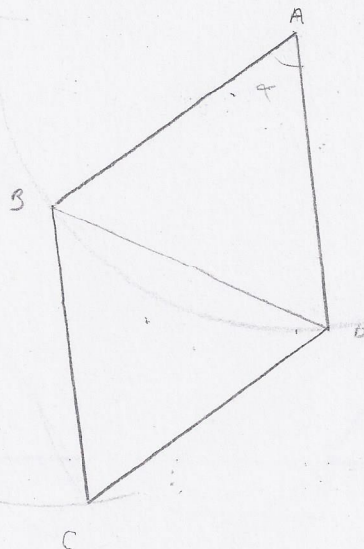
$d_1 + d_2 = 75 \text{ mm}$



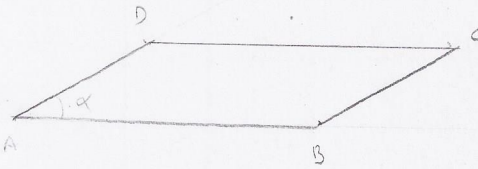
Rombu

$\alpha = 60^\circ$

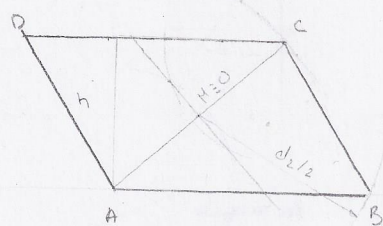
$AB = 40 \text{ mm}$



PS8
 Romboide : $\overline{AB} = \overline{DC} \neq \overline{BC} = \overline{DA}$
 $\overline{AD} = 20 \text{ mm}$
 $\overline{AB} = 40 \text{ mm}$
 $\alpha = 30^\circ$

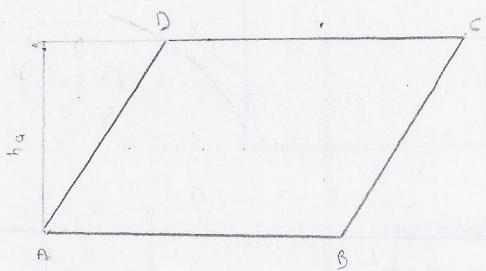


$h = 20 \text{ mm}$
 $d_1 = 30 \text{ mm}$
 $d_2 = 50 \text{ mm}$
 (Romboide)

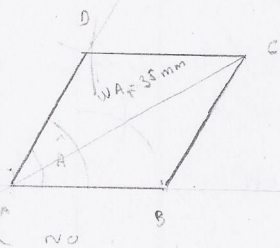


Romboide
 $\overline{AB} = 40 \text{ mm}$
 $\overline{AD} = 30 \text{ mm}$
 $ha = 25 \text{ mm}$

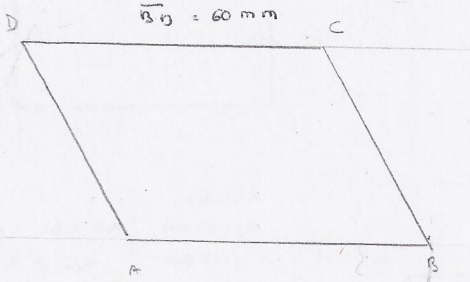
Paralelos con compas!



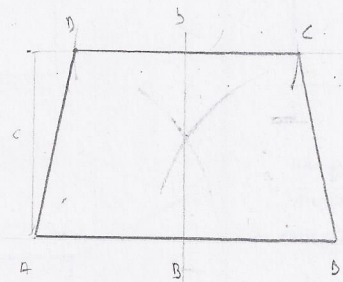
PS9
 Romboide
 $\overline{AB} = 20 \text{ mm}$
 $\overline{AC} = 35 \text{ mm}$
 $\hat{A} = 60^\circ$



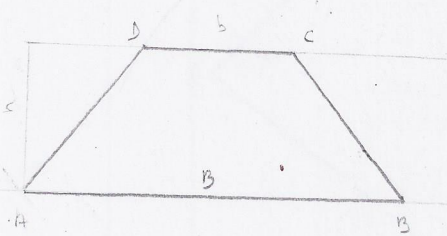
Romboide
 $\overline{AB} = 40 \text{ mm}$
 $\overline{AD} = 30 \text{ mm}$
 $\overline{BD} = 60 \text{ mm}$



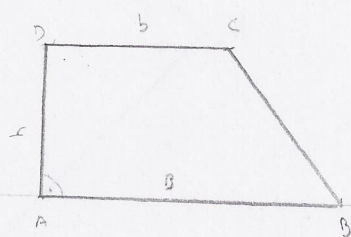
PS9
 Trapecio ($\overline{AB} \parallel \overline{CD}$)
 $B = 40 \text{ mm}$ $\overline{AD} = \overline{CB}$ - es isósceles
 $b = 30 \text{ mm}$
 $h = 25 \text{ mm}$



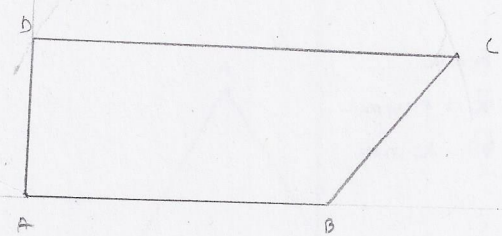
Trapecio isósceles
 $\overline{AB} = 50 \text{ mm}$
 $h = 20 \text{ mm}$
 $d = 40 \text{ mm}$



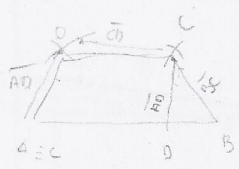
Trapecio rectángulo
 $\overline{AB} = 40 \text{ mm}$
 $\overline{CD} = 25 \text{ mm}$
 $h = 20 \text{ mm}$



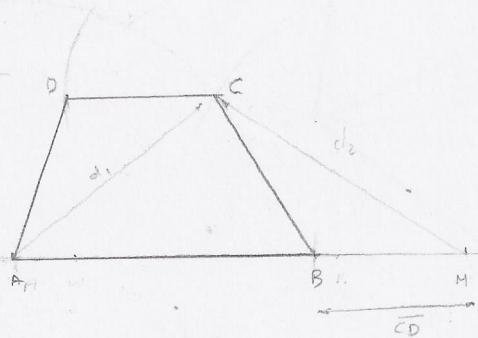
Trapecio rectángulo
 $\overline{AB} = 40 \text{ mm}$
 $\overline{BD} = d_1 = 60 \text{ mm}$
 $\overline{AC} = d_2 = 45 \text{ mm}$



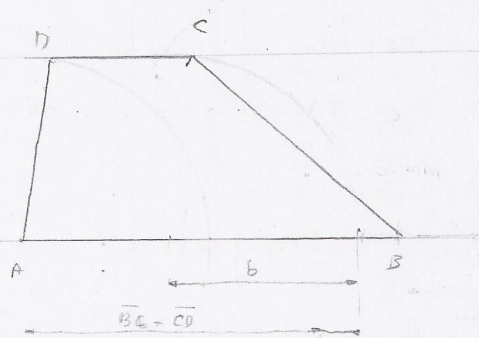
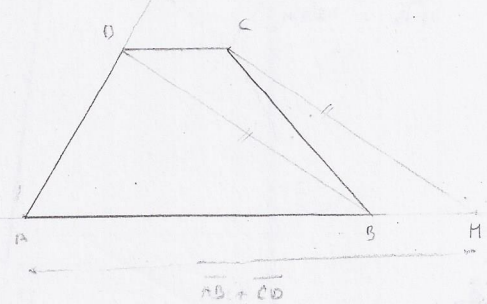
Trapecio escaleno
 $\overline{AB} = 50 \text{ mm}$ $\overline{BC} = 40 \text{ mm}$
 $\overline{CD} = 20 \text{ mm}$ $\overline{DA} = 25 \text{ mm}$



Trapecio escaleno
 $\overline{AB} = 40 \text{ mm}$ $\overline{CD} = 20 \text{ mm}$
 $d_1 = 35 \text{ mm}$ $d_2 = 40 \text{ mm}$



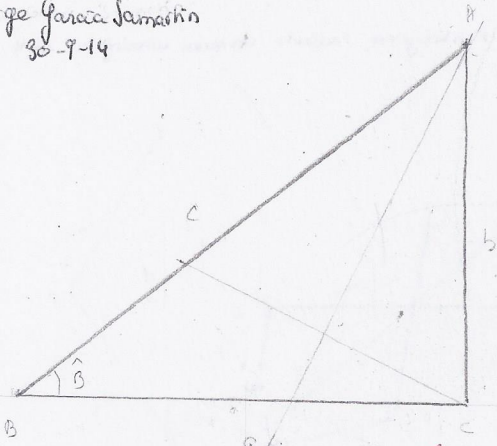
Trapecio escaleno
 $\overline{AB} + \overline{CD} = 60 \text{ mm}$ $\overline{BD} = 40 \text{ mm}$
 $\overline{AC} = 35 \text{ mm}$ $\hat{A} = 60^\circ$



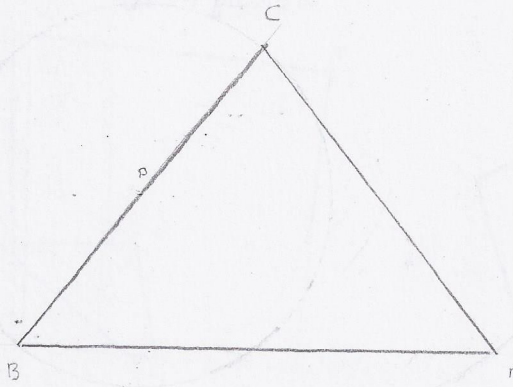
1º Bachillerato. DIBUJO TÉCNICO. Construcción de triángulos y cuadriláteros

1. Dibujar un triángulo ABC, conocidos el lado $a = 60 \text{ mm}$, el ángulo $\hat{B} = 40^\circ$ y la diferencia de los lados $c - b = 28 \text{ mm}$
2. Dibujar un triángulo isósceles ABC, sabiendo que el lado desigual c es la base y un punto P (situarlo a 20 mm de la base) es el punto medio de uno de los lados iguales, que miden $a = b = 50 \text{ mm}$
3. Dibujar un triángulo rectángulo ABC, conocidos el cateto $c = 35 \text{ mm}$ y la suma de la hipotenusa y el otro cateto, $a + b = 72 \text{ mm}$
4. Dibujar un triángulo rectángulo ABC, conocidos la hipotenusa $a = 65 \text{ mm}$ y la diferencia entre los catetos $b - c = 27 \text{ mm}$
- ~~5. Dibujar un triángulo ABC, conocidos los ángulos $\hat{A} = 56^\circ$ y $\hat{C} = 80^\circ$, así como la suma de los lados $b + c = 67 \text{ mm}$~~
6. Dibujar un rombo ABCD de diagonal $\overline{AC} = 58 \text{ mm}$
Se conoce también la altura $h = 28 \text{ mm}$
7. Dibujar un romboide ABCD, conocidas la altura $h = 33 \text{ mm}$ y las diagonales $d_1 = 64 \text{ mm}$ y $d_2 = 46 \text{ mm}$
8. Dibujar un romboide ABCD, conocidos el lado horizontal $\overline{AB} = 60 \text{ mm}$, la diagonal $\overline{AC} = 80 \text{ mm}$ y la diagonal $\overline{BD} = 68 \text{ mm}$
9. Dibujar un trapecio isósceles ABCD, conocidas la base mayor $\overline{AB} = 60 \text{ mm}$, la base menor $\overline{CD} = 45 \text{ mm}$ y el lado oblicuo $\overline{AD} = 33 \text{ mm}$
10. Dibujar un trapecio rectángulo ABCD, conocidas la base mayor $B = \overline{AB} = 68 \text{ mm}$, la altura $h = \overline{AD} = 42 \text{ mm}$ y la diagonal $\overline{AC} = 55 \text{ mm}$
11. Dibujar un trapecio isósceles ABCD, conocidas la base mayor $\overline{AB} = 60 \text{ mm}$, la altura $h = 37 \text{ mm}$ y el ángulo $\hat{A} = 75^\circ$
12. Dibujar un trapecio escaleno ABCD, conocidos la base mayor $\overline{AB} = 65 \text{ mm}$, el lado no paralelo $\overline{BC} = 35 \text{ mm}$, la diagonal $\overline{AC} = 63 \text{ mm}$ y el ángulo agudo $\hat{A} = 45^\circ$

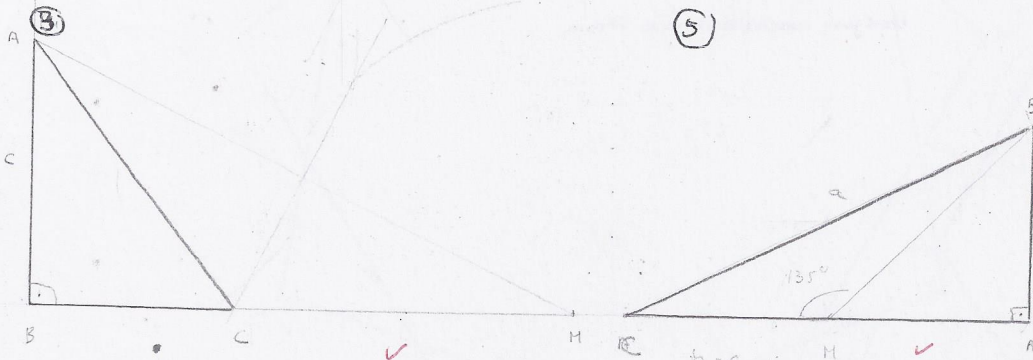
①



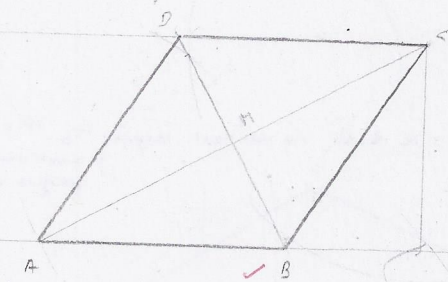
②



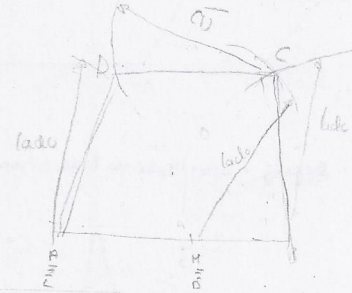
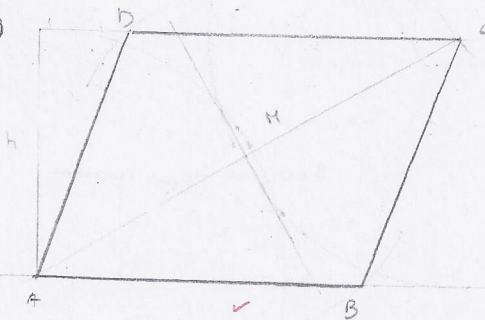
⑤



⑥



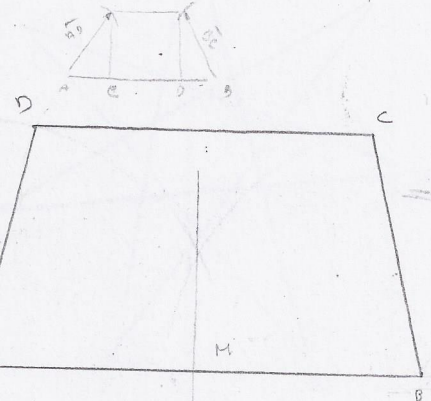
⑦



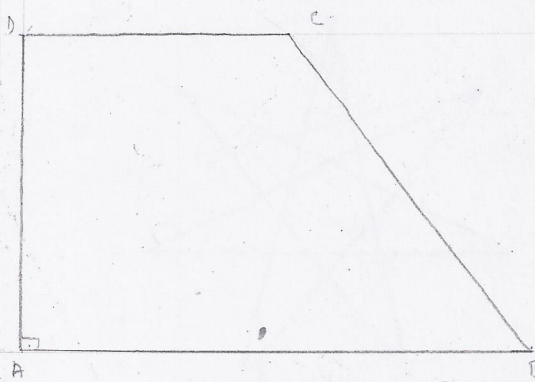
⑧



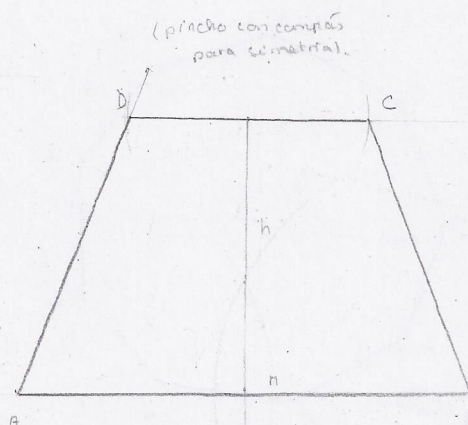
⑨



⑩

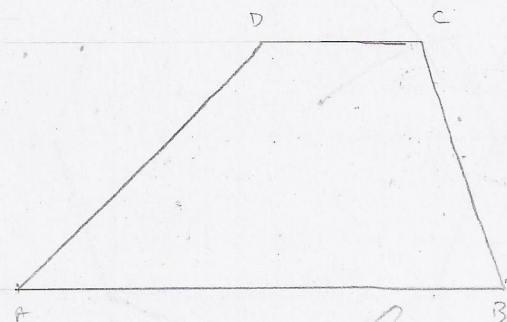


⑪

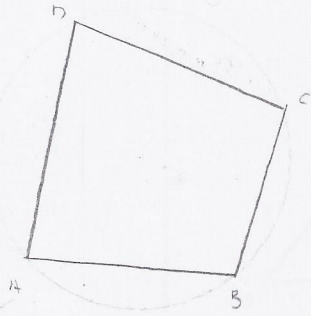


(plancha con compás para simetría)

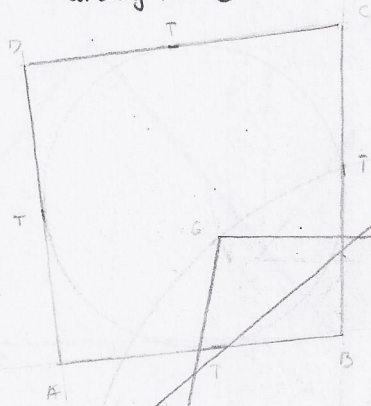
⑫



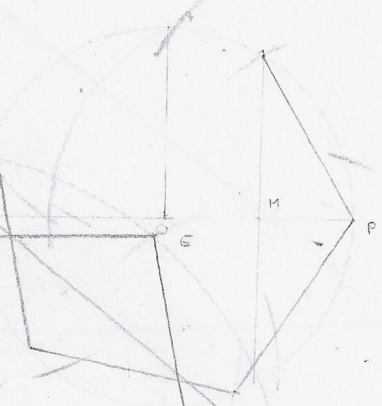
Trapezoide inscrito
en circunf $r = 20$



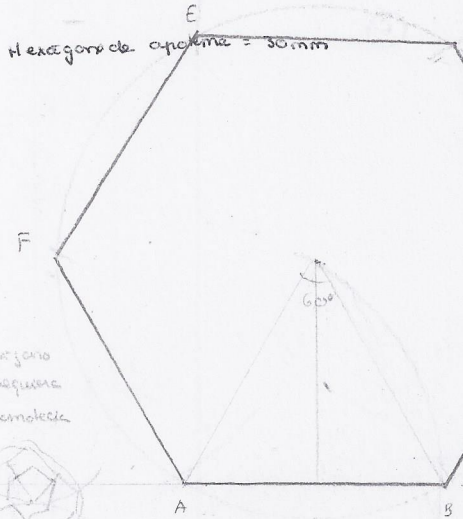
Trapezoide circunscrito
en circunf $r = 20$



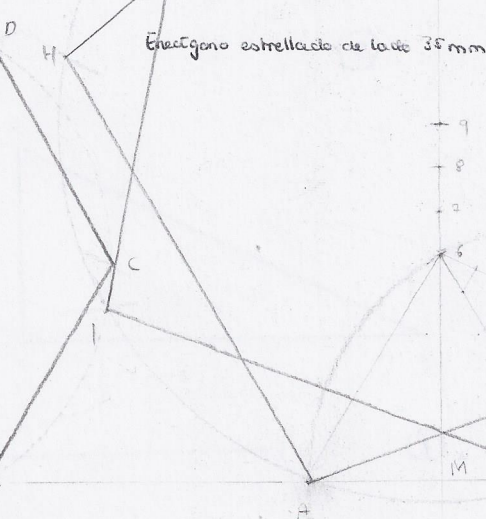
Pentágono inscrito en una circunf $r = 25$



Hexágono de apotema = 30 mm



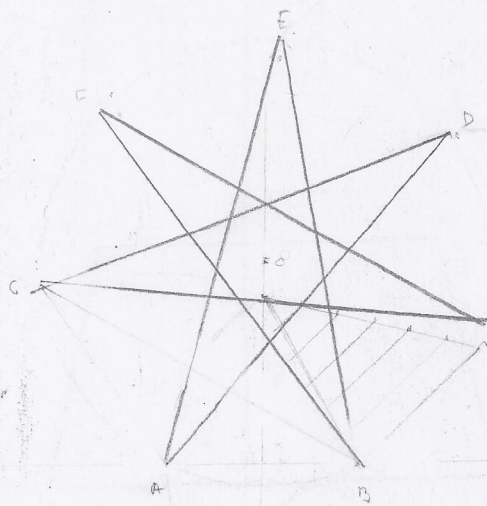
Hexágono estrellado de lado 35 mm



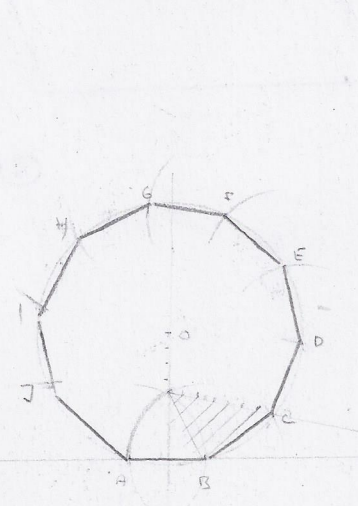
Hexágono
inscrito
- circunscrito



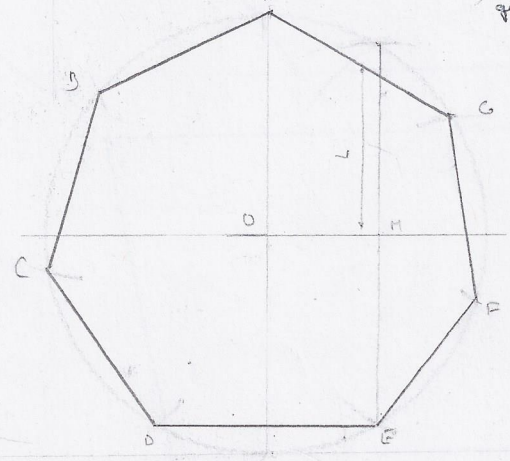
Heptágono estrellado de lado 25 mm



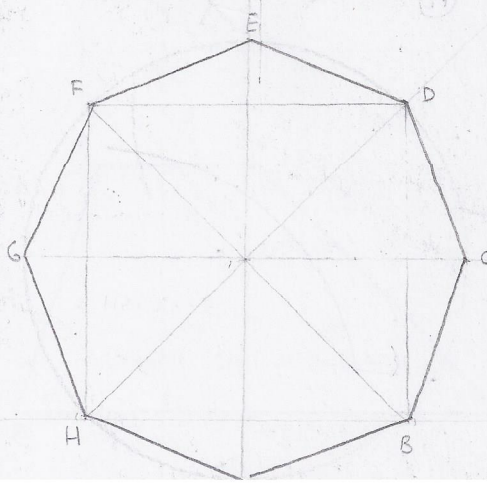
Décagono de per 100 mm



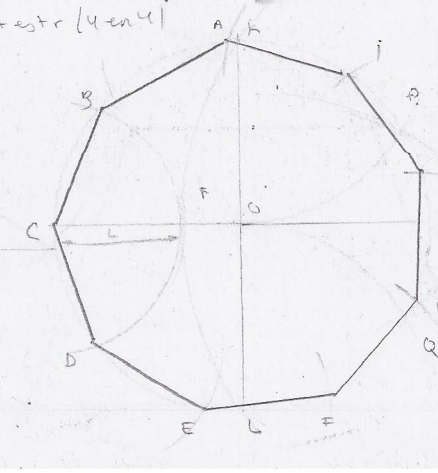
Deducir el lado de un hept según $r = 3$ p 63
(a construcción
gráfica normalizada)



Octógono de diagonal 60 mm
(Hb es la diagonal
efecto del
cuadrado)



Deducir lado de decágono inscrito
en una circunf de $r = 25$ mm
+ estr (4 en 4)



Heptágono estrellado de 2º orden, tomando
los vértices de 3 en 3

