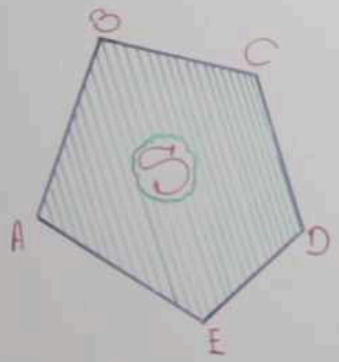
ÁREAS

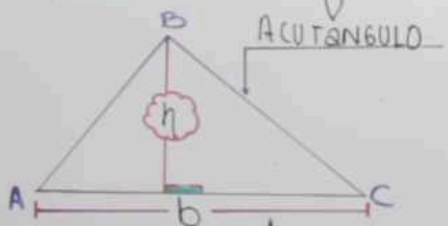
I. DEFINICIÓN:



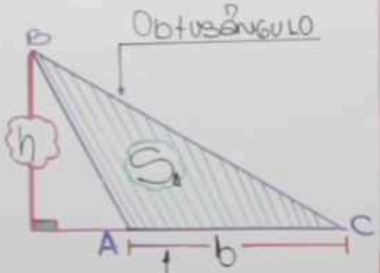
II. PRINCIPALES ÁREAS:

TRIÁNGULOS

ACUTÁNGULO

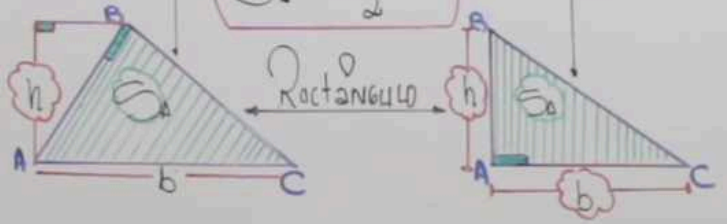


OBTUSÁNGULO

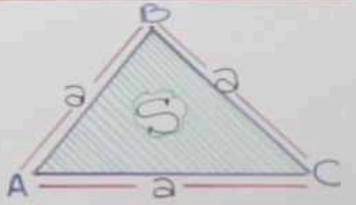


$$S = \frac{b \times h}{2}$$

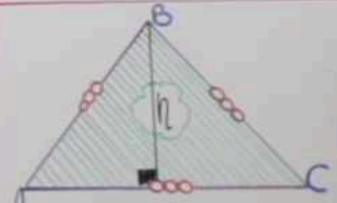
RECTÁNGULO



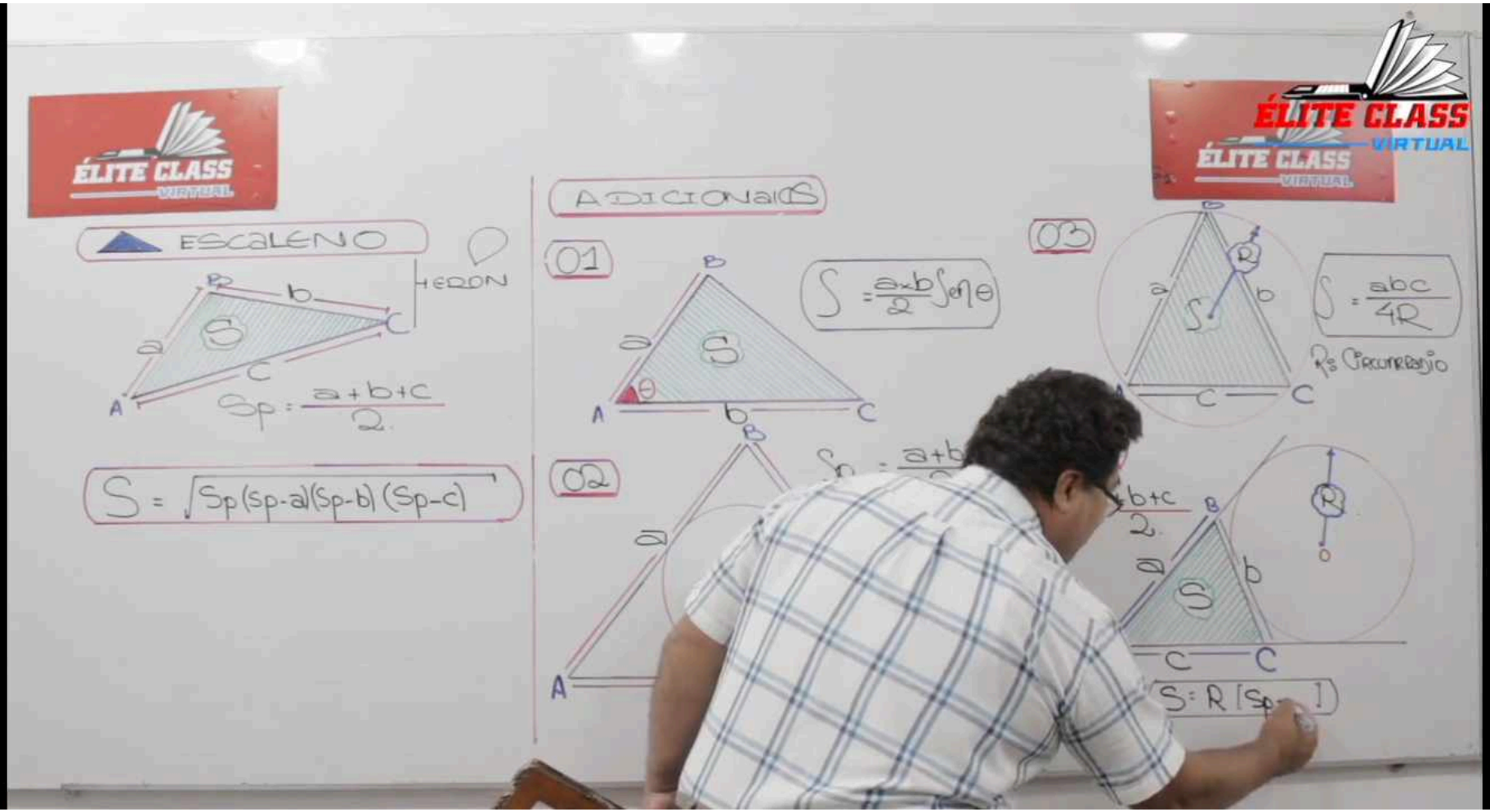
EQUILÁTERO:

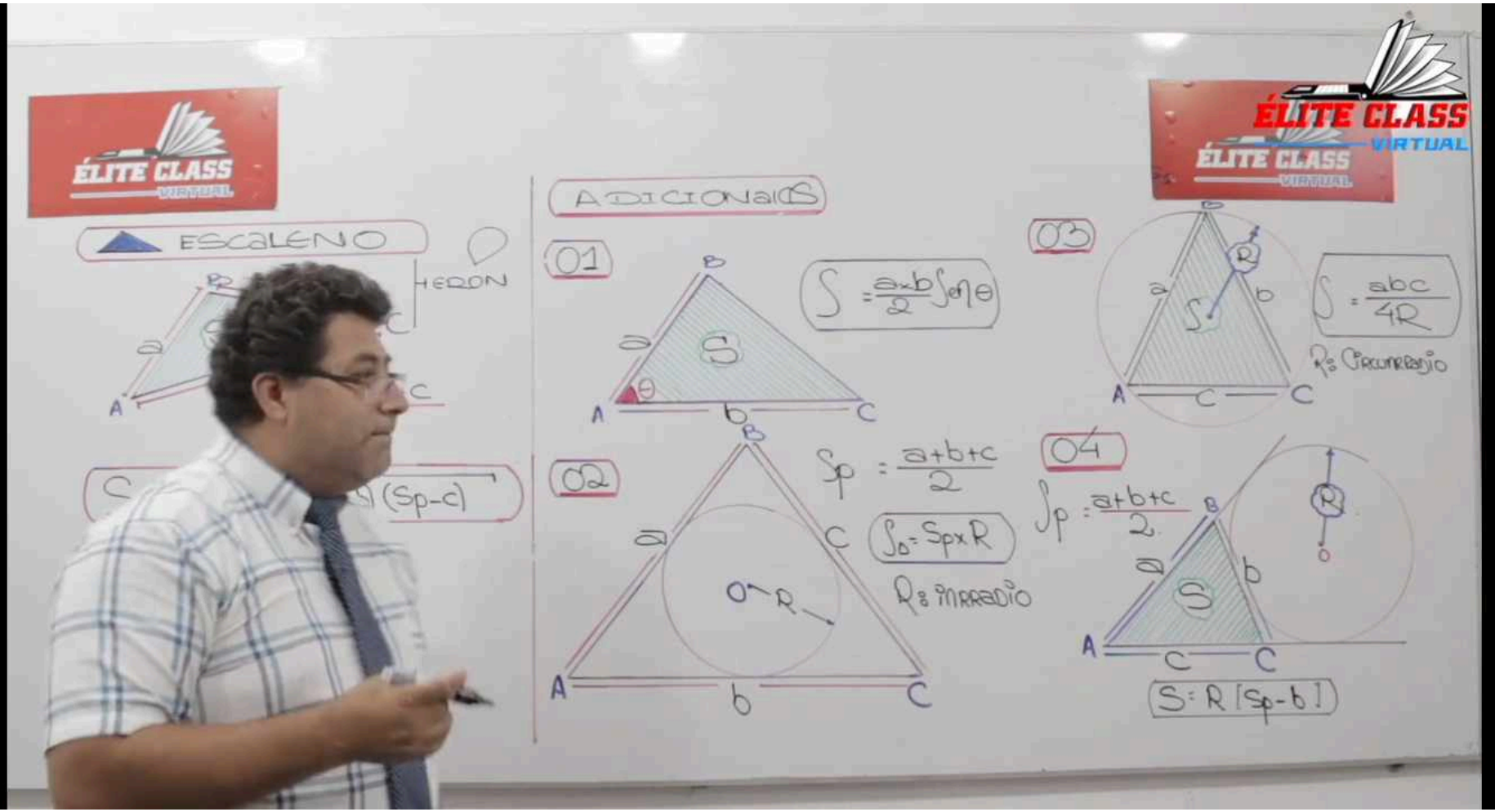


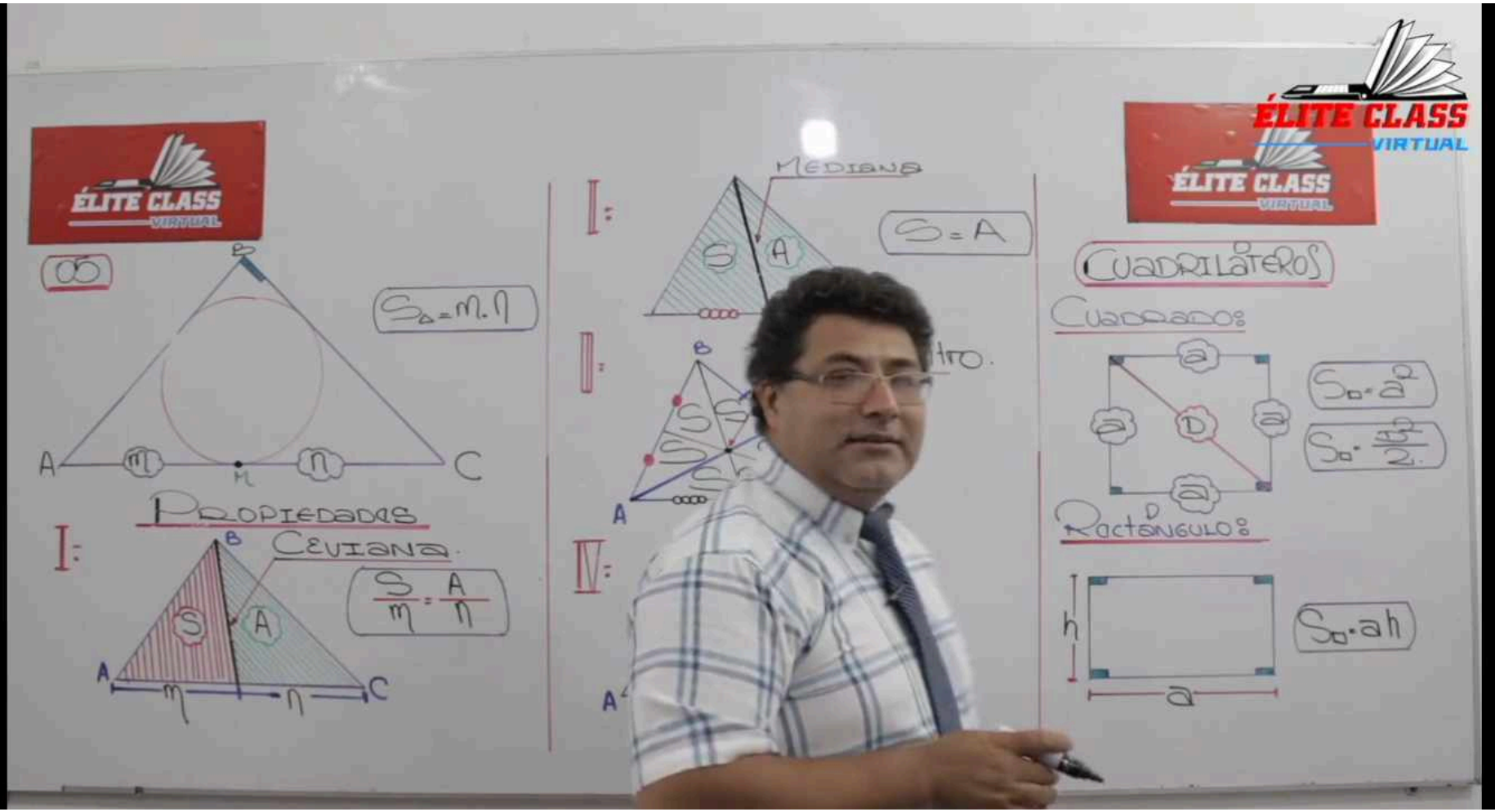
$$S = \frac{a^2\sqrt{3}}{4}$$

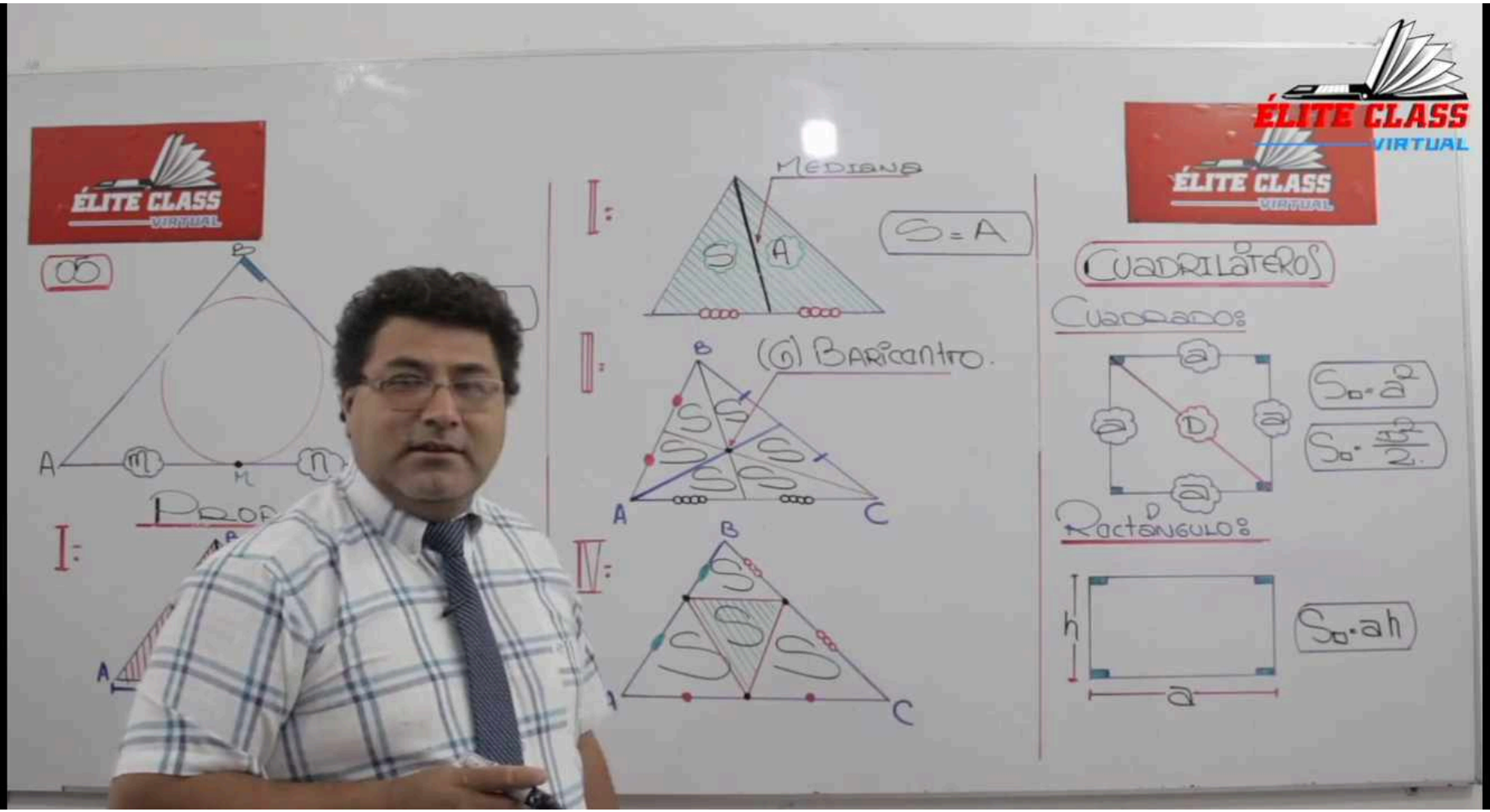


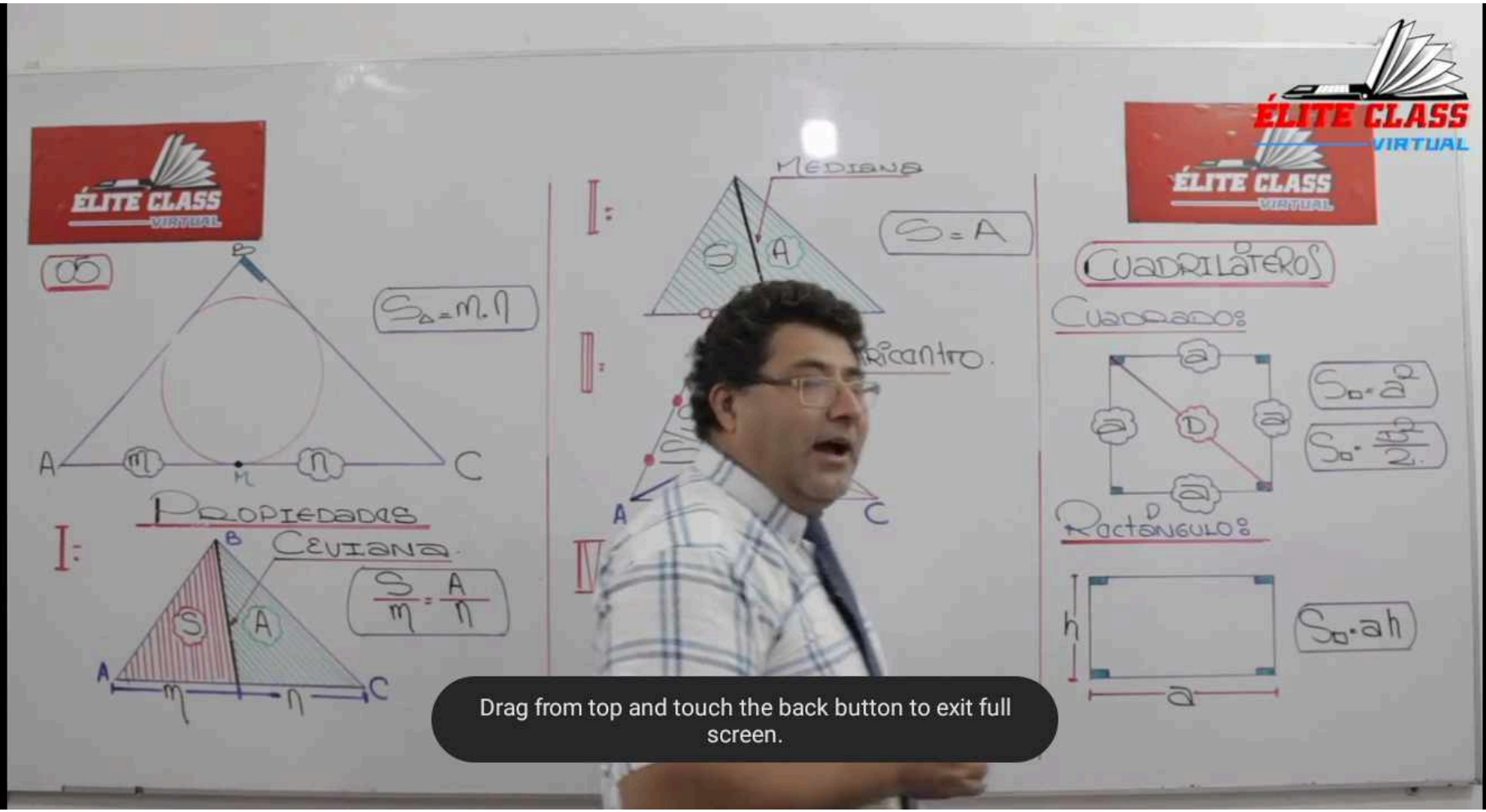
$$S = \frac{h^2\sqrt{3}}{3}$$

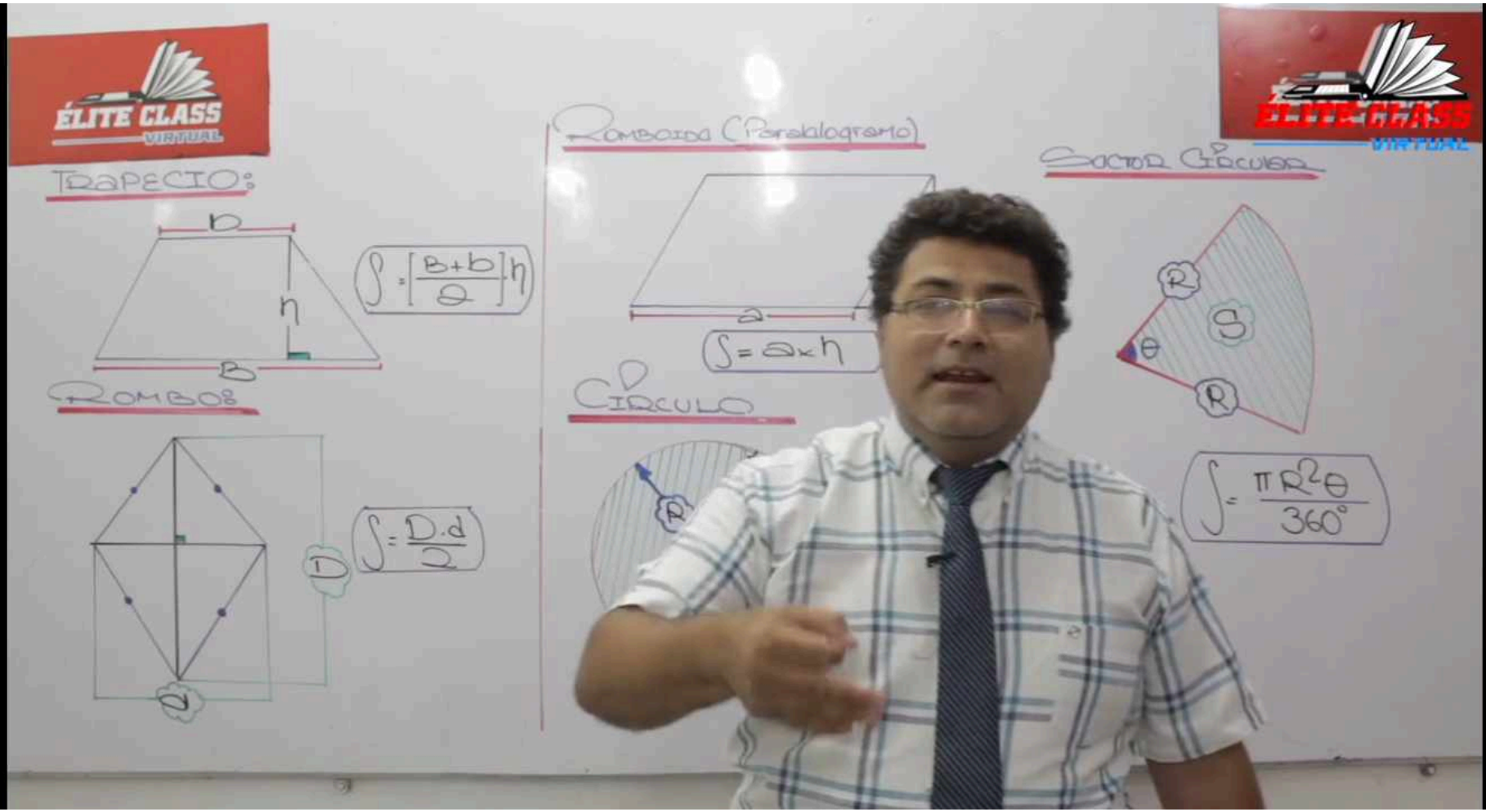

ÉLITE CLASS VIRTUAL
ESCALENO
HERON
a
b
c
S
A
B
C
$S_p = \frac{a+b+c}{2}$
$S = \sqrt{S_p(S_p-a)(S_p-b)(S_p-c)}$
ADICIONALES
01
$S = \frac{a \times b}{2} \operatorname{sen}\theta$
θ
02
03
$S = \frac{abc}{4R}$
R: Circunradio
$S = R[S_p$

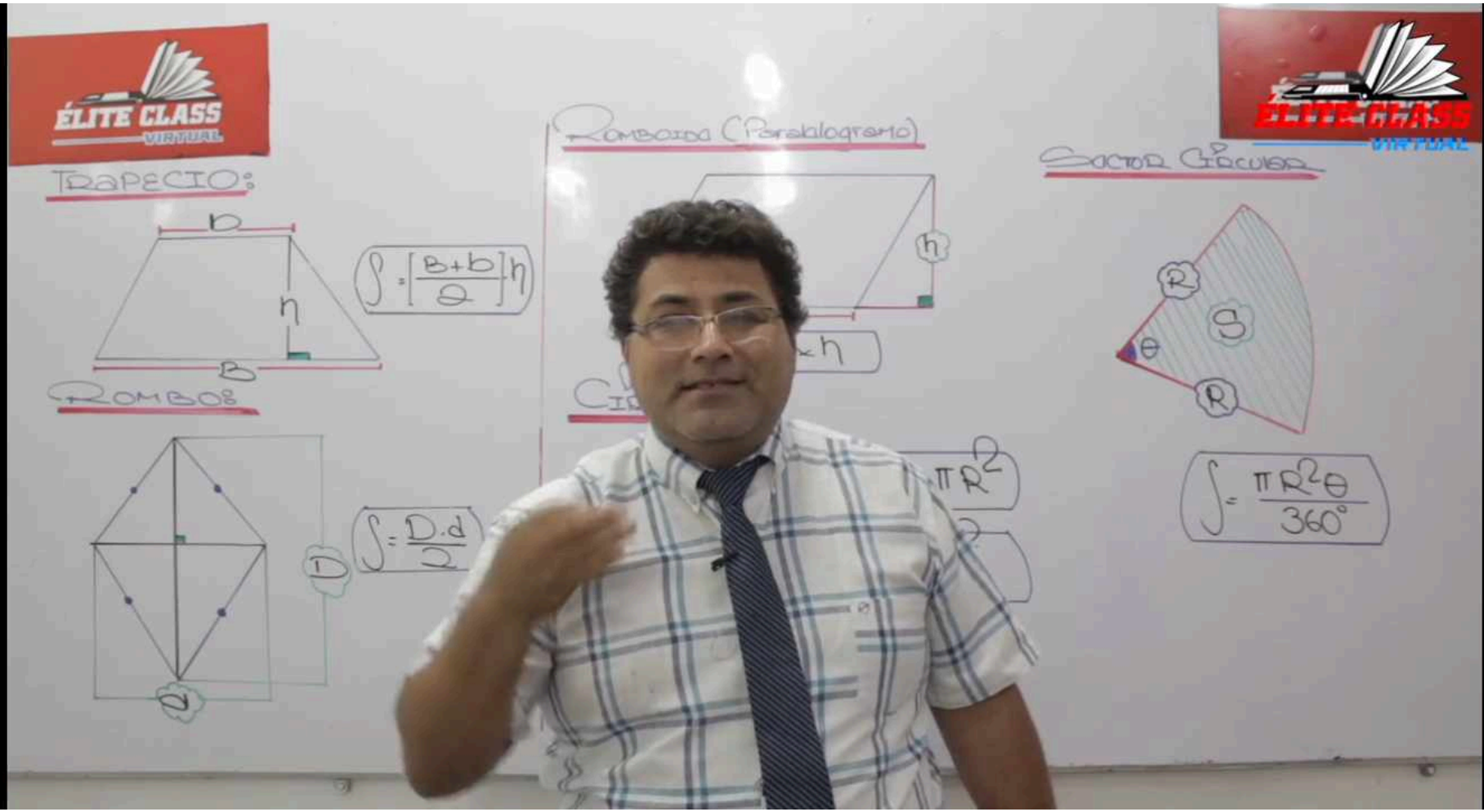

ÉLITE CLASS VIRTUAL
ESCALENO
HERON
ADICIONAIS
01
02
03
04
S = (a·b/2) sen θ
Sp = (a+b+c)/2
S0 = Sp × R
R = INRAIO
S = abc/4R
R = CIRCUNRAIO
Sp = (a+b+c)/2
S = R (Sp - b)


ÉLITE CLASS VIRTUAL
05
$S_\Delta = m.n$
A
m
M
n
C
PROPIEDADES
I:
B
CEVIANA.
S
A
$\frac{S}{m} = \frac{A}{n}$
A
m
n
C
I:
MEDIANA
S
A
S = A
II:
B
ITO.
A
IV:
A'
ÉLITE CLASS VIRTUAL
CUADRILÁTEROS
CUADRADO:
a
a
D
a
a
$S_\square = a^2$
$S_\square = \frac{d^2}{2}$
RECTÁNGULO:
h
a
$S_\square = ah$


ÉLITE CLASS VIRTUAL
ÉLITE CLASS VIRTUAL
ÉLITE CLASS VIRTUAL
I:
MEDIANA
S = A
II:
(G) BARICENTRO.
IV:
CUADRILÁTEROS
CUADRADOS:
RECTÁNGULOS:
S□ = a²
S□ = ab
S□ = ah

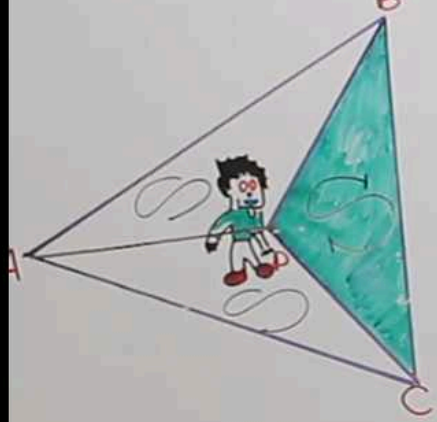

ÉLITE CLASS VIRTUAL
05
$S_\Delta = m.n$
A
m
M
n
C
PROPIEDADES
I:
CEVIANA
B
S
A
$\frac{S}{m} = \frac{A}{n}$
MEDIANA
I:
S = A
II:
Baricentro
A
C
CUADRILÁTEROS
Cuadrado:
a
D
$S_\square = a^2$
$S_\square = \frac{D^2}{2}$
Rectángulo:
h
a
$S_\square = ah$
Drag from top and touch the back button to exit full screen.


ÉLITE CLASS
VIRTUAL
TRAPECIO:
b
h
B
$S = \left[\frac{B+b}{2}\right] h$
ROMBO:
D
d
$S = \frac{D \cdot d}{2}$
ROMBOIDE (Paralelogramo)
a
$S = a \times h$
CÍRCULO
R
SECTOR CIRCULAR
R
θ
S
R
$S = \frac{\pi R^2 \theta}{360°}$

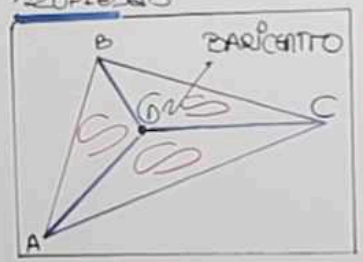

ÉLITE CLASS
VIRTUAL
TRAPECIO:
b
h
B
$S = \left[\frac{B+b}{2}\right]h$
ROMBO:
D
d
$S = \frac{D \cdot d}{2}$
ROMBOIDE (Paralelogramo)
h
$\times h$
πR^2
SECTOR CIRCULAR
R
S
θ
R
$S = \frac{\pi R^2 \theta}{360°}$

ÁREAS

01



PROPIEDAD

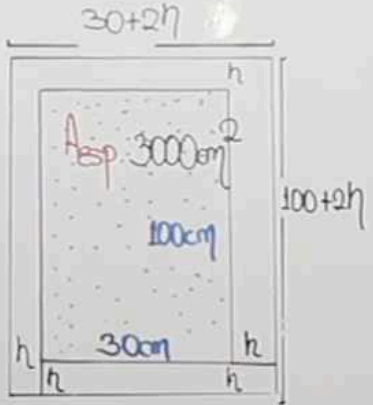


$A_{TOTAL} = 120\ m^2$

$35 = 120\ m^2$

$\therefore S = 40\ m^2$

02



$A_{ESP} = \frac{A_{TOTAL}}{2}$

$6000\ cm^2 = (100+2h)(30+2h)$

$6000 = 4(50+h)(15+h)$

$1500 = 50(15) + 65h + h^2$

$1500 = 750 + 65h + h^2$

$h^2 + 65h - 750 = 0$

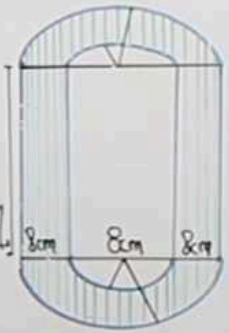
$h \quad 75$

$h \quad -10$

$h = 10$

$750 \mid 3$
$250 \mid 5$
$50 \mid 5$
$10 \mid 5$
2

03

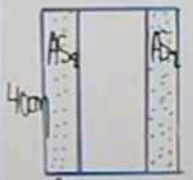


$A_T = 128\pi + 640\ cm^2$

$AS_1 = \frac{\pi 12^2}{2} - \frac{\pi 4^2}{2}$

$AS_1 = 72\pi - 8\pi$

$AS_1 = 64\pi$

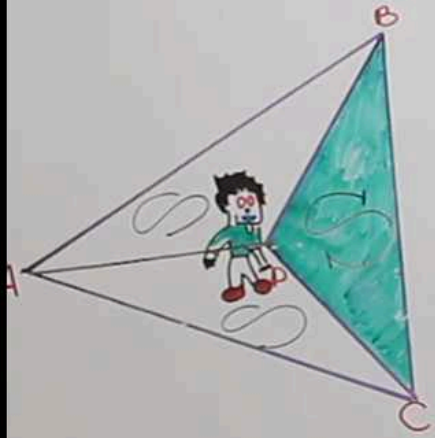


$AS_2 = 320\ m^2$

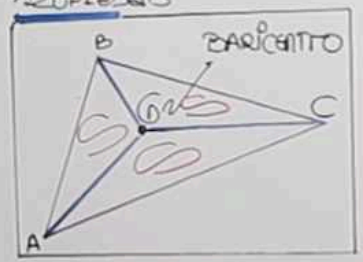
ÁREAS

ÉLITE CLASS VIRTUAL

01



PROPIEDAD

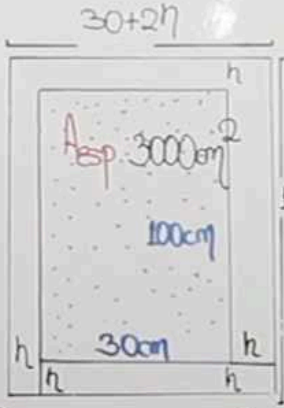


$A_{TOTAL} = 120\ m^2$

$3S = 120\ m^2$

$\therefore\ S = 40\ m^2$

02



$A_{ESP} = \frac{A_{TOTAL}}{2}$

$6000\ cm^2 = (100+2h)(30+2h)$

$6000 = 4(50+h)(15+h)$

$1500 = 50(15) + 65h + h^2$

$1500 = 750 + 65h + h^2$

$h^2 + 65h - 750 = 0$

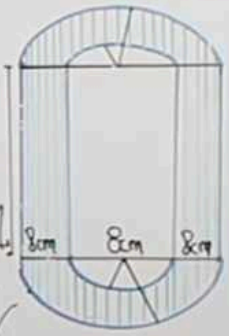
$h \quad 75$

$h \quad -10$

$h = 10$ ✓

750 | 3
250 | 5
50 | 5
10 | 2
5 | 5

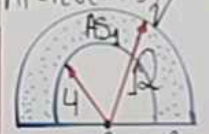
03



$A_T = 128\pi + 640\ cm^2$

$A_T = 64(2\pi + 10)$

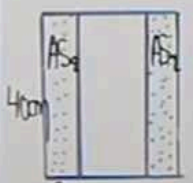
$A_T = 128(\pi + 5)$



$AS_1 = \frac{\pi 12^2}{2} - \frac{\pi 4^2}{2}$

$AS_1 = 72\pi - 8\pi$

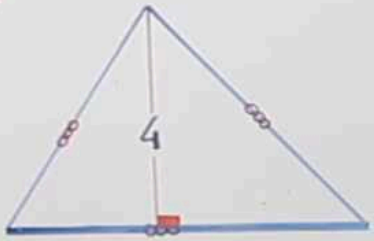
$AS_1 = 64\pi$

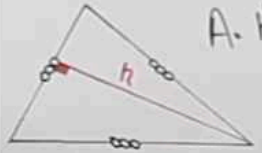


$AS_2 = 320\ m^2$

ÉLITE CLASS VIRTUAL

04

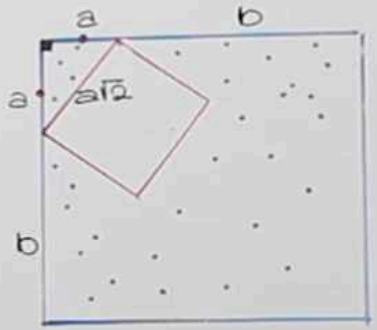




$A = \frac{h^2\sqrt{3}}{3} = \frac{4^2\sqrt{3}}{3}$

$A = \frac{16}{3}\sqrt{3}$

05



$A_S = 35A_{NS}$

$A_\square - A_{NS} = 35A_{NS}$

$A_\square = 36A_{NS}$

$(a+b)^2 = 36(a\sqrt{2})^2$

$a+b = 6a\sqrt{2}$

$4(a+b) + 4a\sqrt{2} = 84$

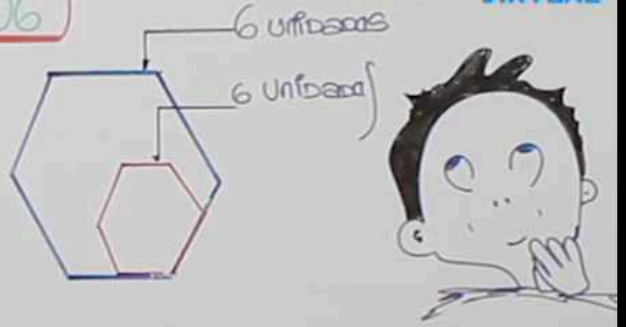
$a+b + a\sqrt{2} = 21$

$6a\sqrt{2} + a\sqrt{2} = 21$

$7a\sqrt{2} = 21$

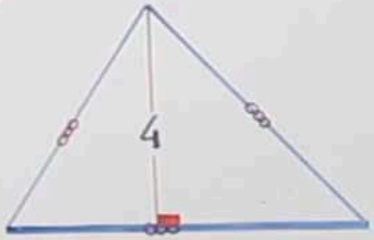
$a\sqrt{2} = 3$

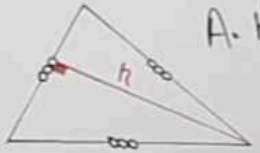
06



ÉLITE CLASS VIRTUAL

04

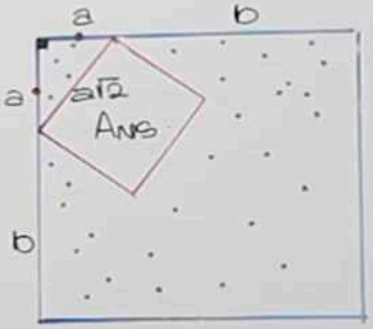




$A = \frac{h^2\sqrt{3}}{3} = \frac{4^2\sqrt{3}}{3}$

$A = \frac{16}{3}\sqrt{3}$

05



$A_S = 35A_{NS}$

$A_\square - A_{NS} = 35A_{NS}$

$A_\square = 36A_{NS}$

$(a+b)^2 = 36(a\sqrt{2})^2$

$a+b = 6a\sqrt{2}$

$4(a+b) + 4a\sqrt{2} = 84$

$a+b + a\sqrt{2} = 21$

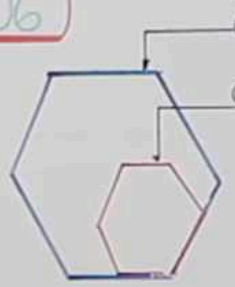
$6a\sqrt{2} + a\sqrt{2} = 21$

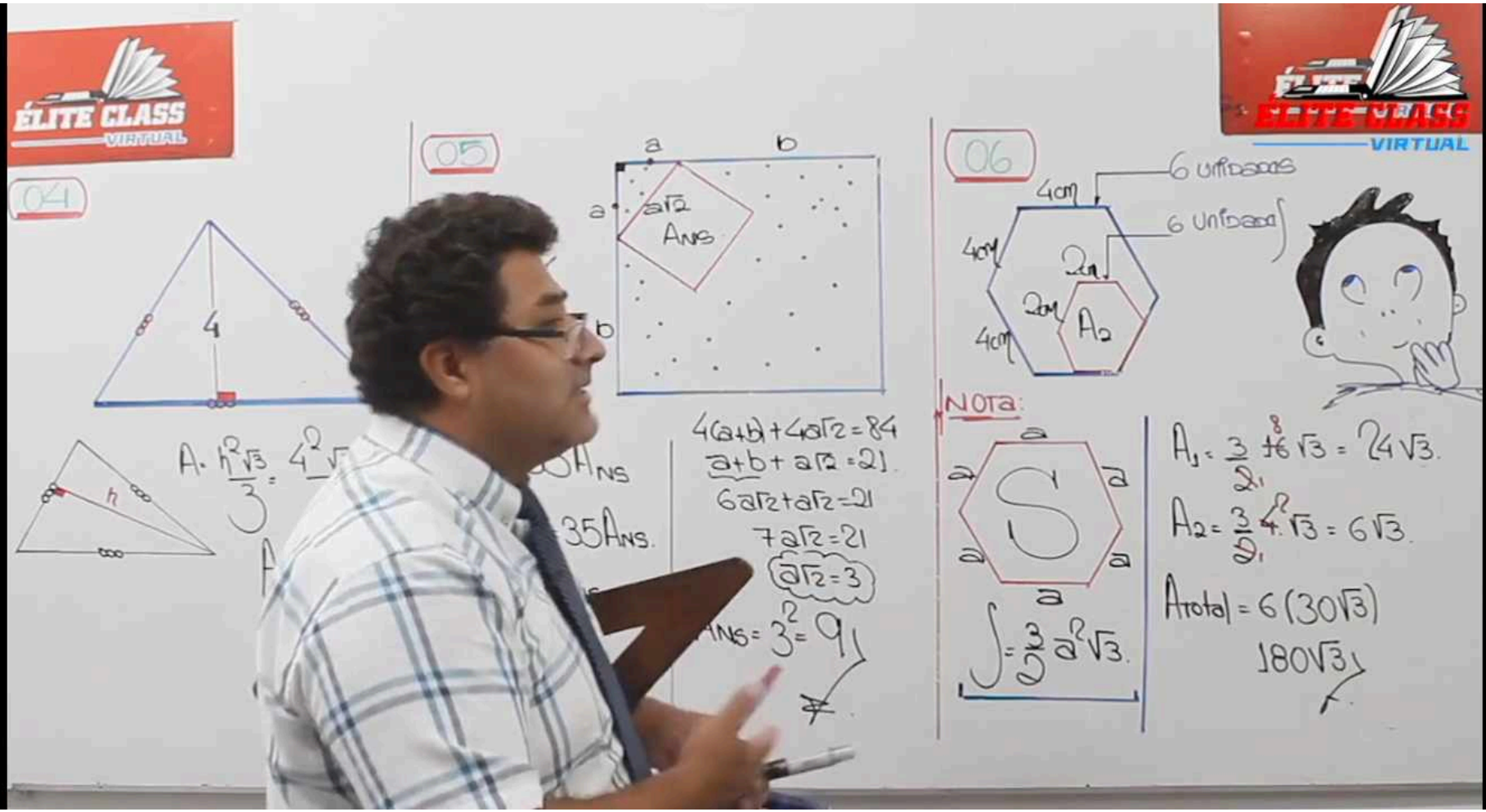
$7a\sqrt{2} = 21$

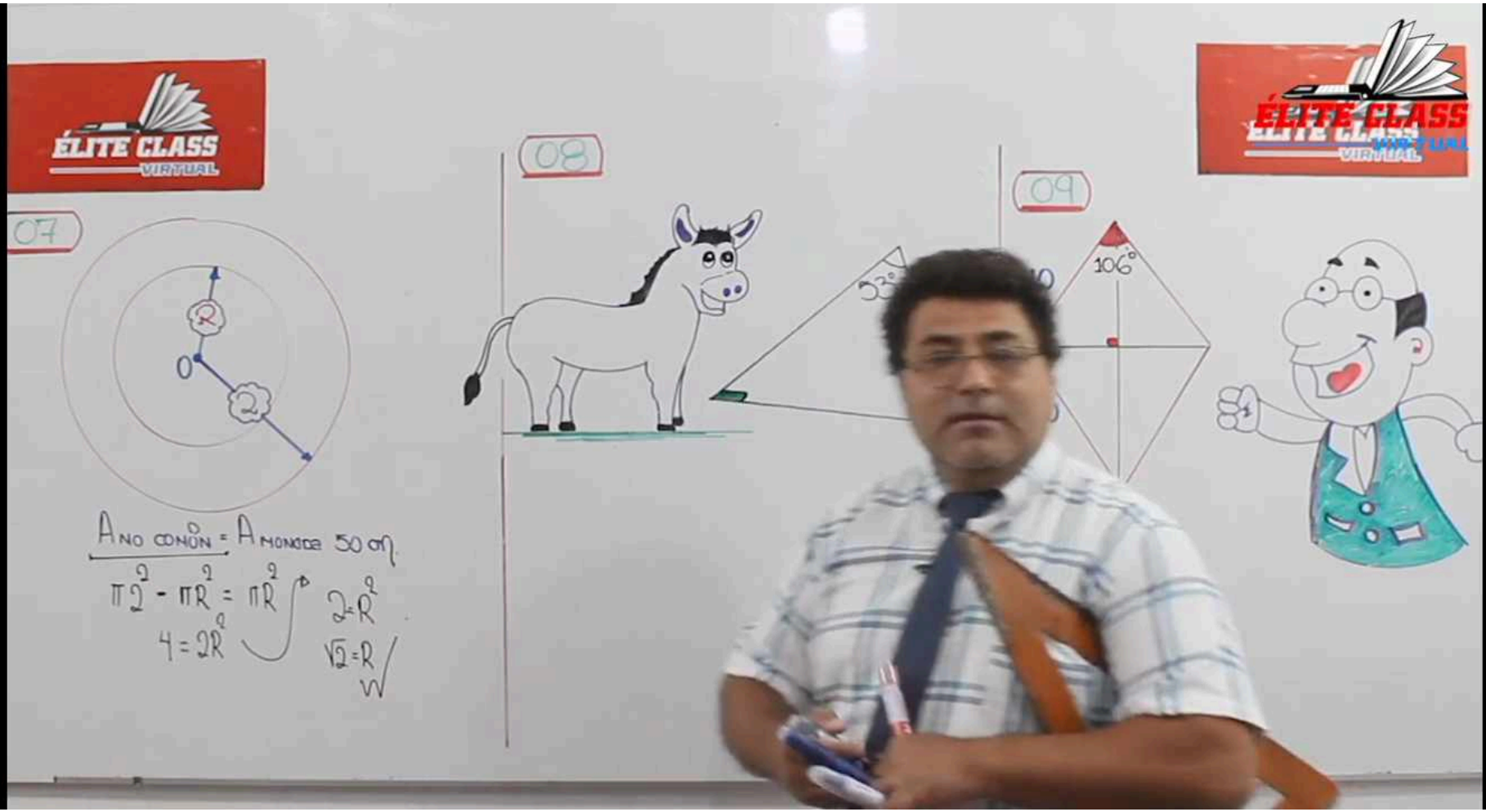
$a\sqrt{2} = 3$

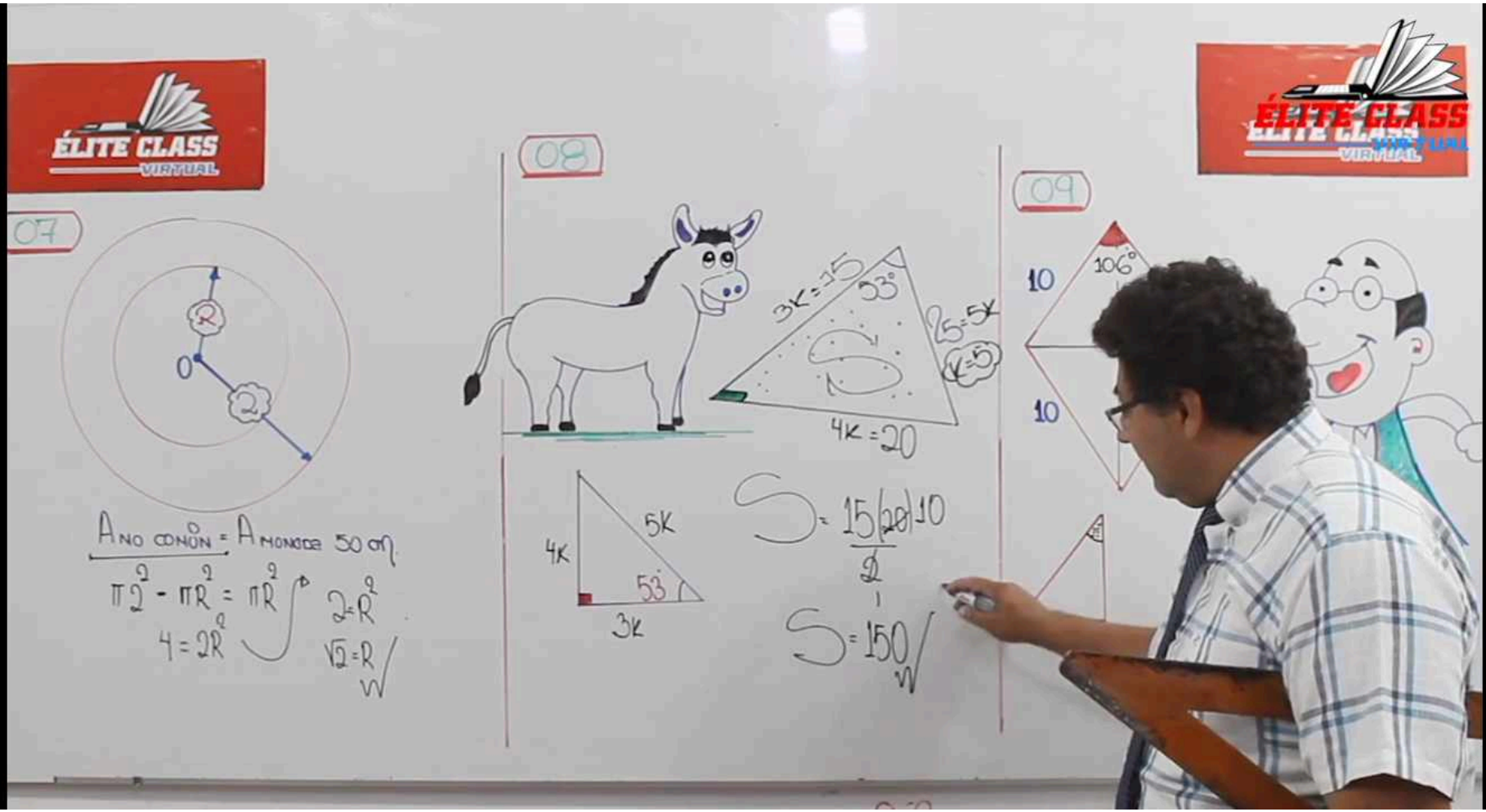
$A_{NS} = 3^2 = 9$ ✗

06



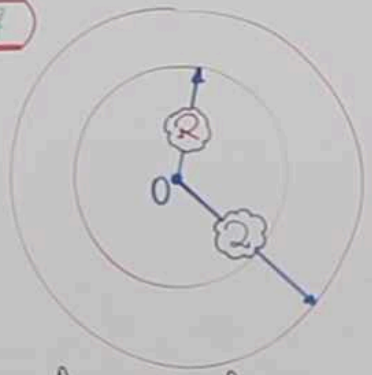

ÉLITE CLASS VIRTUAL
04
4
A. h²√3 / 3 = 4²√
05
a
b
a
b
a√2
ANS
35 ANS.
4(a+b)+4a√2=84
a+b+a√2=21
6a√2+a√2=21
7a√2=21
a√2=3
ANS = 3² = 9
06
6 unidades
6 unidades
4cm
4cm
4cm
2cm
2cm
A2
NOTA:
a
a
a
a
a
a
S = 6 · a²√3 / 4
A1 = 3/2 · 6²√3 = 24√3.
A2 = 3/2 · 4²√3 = 6√3.
Atotal = 6(30√3)
180√3


ÉLITE CLASS
VIRTUAL
07
2
0
2
A NO COMÚN = A MONDOCA 50 cm.
π2² - πR² = πR²
4 = 2R²
2 = R²
√2 = R
08
09
106°
ÉLITE CLASS
VIRTUAL


ÉLITE CLASS
VIRTUAL
07
R
r
O
A NO COMÚN = A MONEDA 50 cm.
π2² - πR² = πR²
4 = 2R²
2 = R²
√2 = R
08
3K = 15
53°
25 = 5K
K = 5
4K = 20
4K
5K
53°
3K
S = 15(20)10/2
S = 150
09
10
106°
10

ÉLITE CLASS VIRTUAL

07



$A_{\text{NO COMÚN}} = A_{\text{MONDOCA}}$ 50 cm²

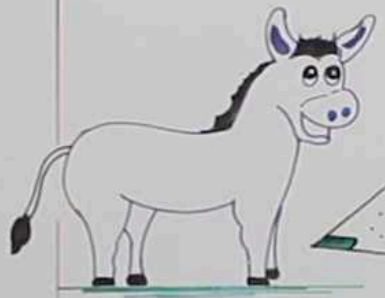
$\pi 2^2 - \pi R^2 = \pi R^2$

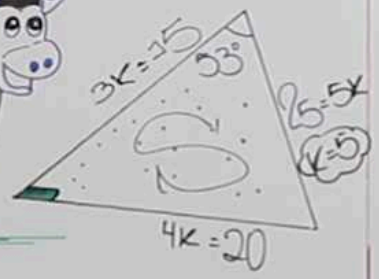
$4 = 2R^2$

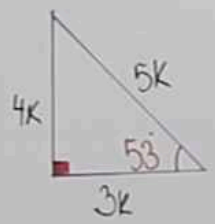
$2 = R^2$

$\sqrt{2} = R$ ✓

08



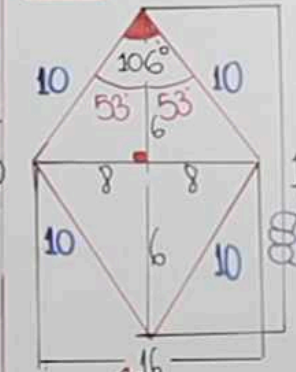


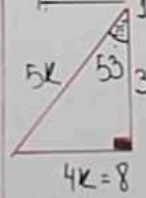


$S = \frac{15(20)10}{2}$

$S = 150$ ✓

09





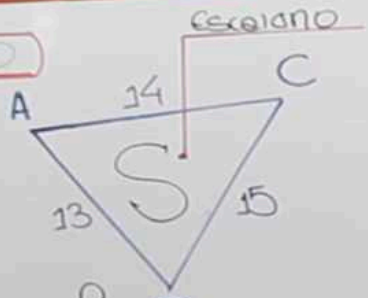
$5K = 10$

$K = 2$

$S = \frac{16 \times 12}{2} = 96$ ✓

ÉLITE CLASS VIRTUAL

10



HERON: $S_p = \frac{14+13+15}{2} = \frac{42}{2}$

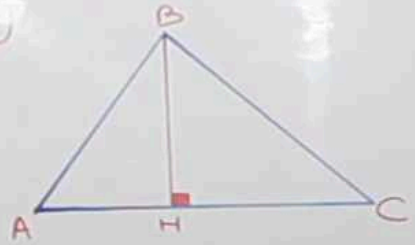
$S_p = 21$

$\int = \sqrt{21.6.8.7} = \sqrt{7.3.2.4.2.7}$

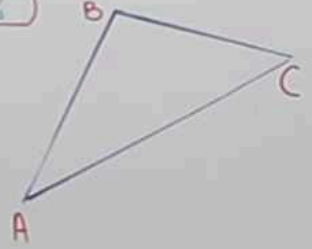
$\int = 7.3.4 = 21.4$

$S = 84$

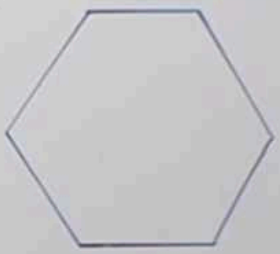
11



12



13

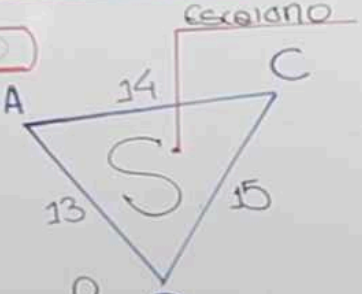


14

ÉLITE CLASS VIRTUAL

10

Escaleno



HERON: $S_p = \frac{14+13+15}{2} = \frac{42}{2}$

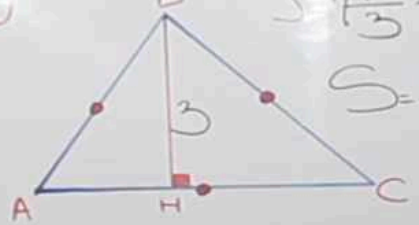
$S_p = 21$

$S = \sqrt{21.6.8.7} = \sqrt{7.3.3.2.4.2.7}$

$S = 7.3.4 = 21.4$

$S = 84$

11

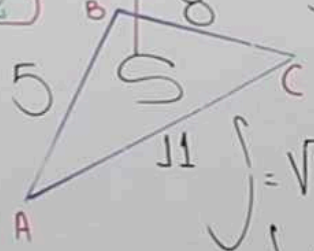


$S = \frac{l^2\sqrt{3}}{3} = \frac{9\sqrt{3}}{3}$

$S = 3\sqrt{3}$

12

Escaleno

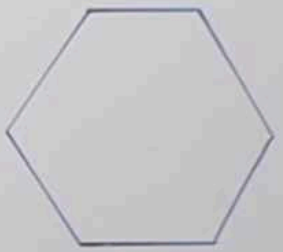


$S_p = \frac{5+8+11}{2} = 12$

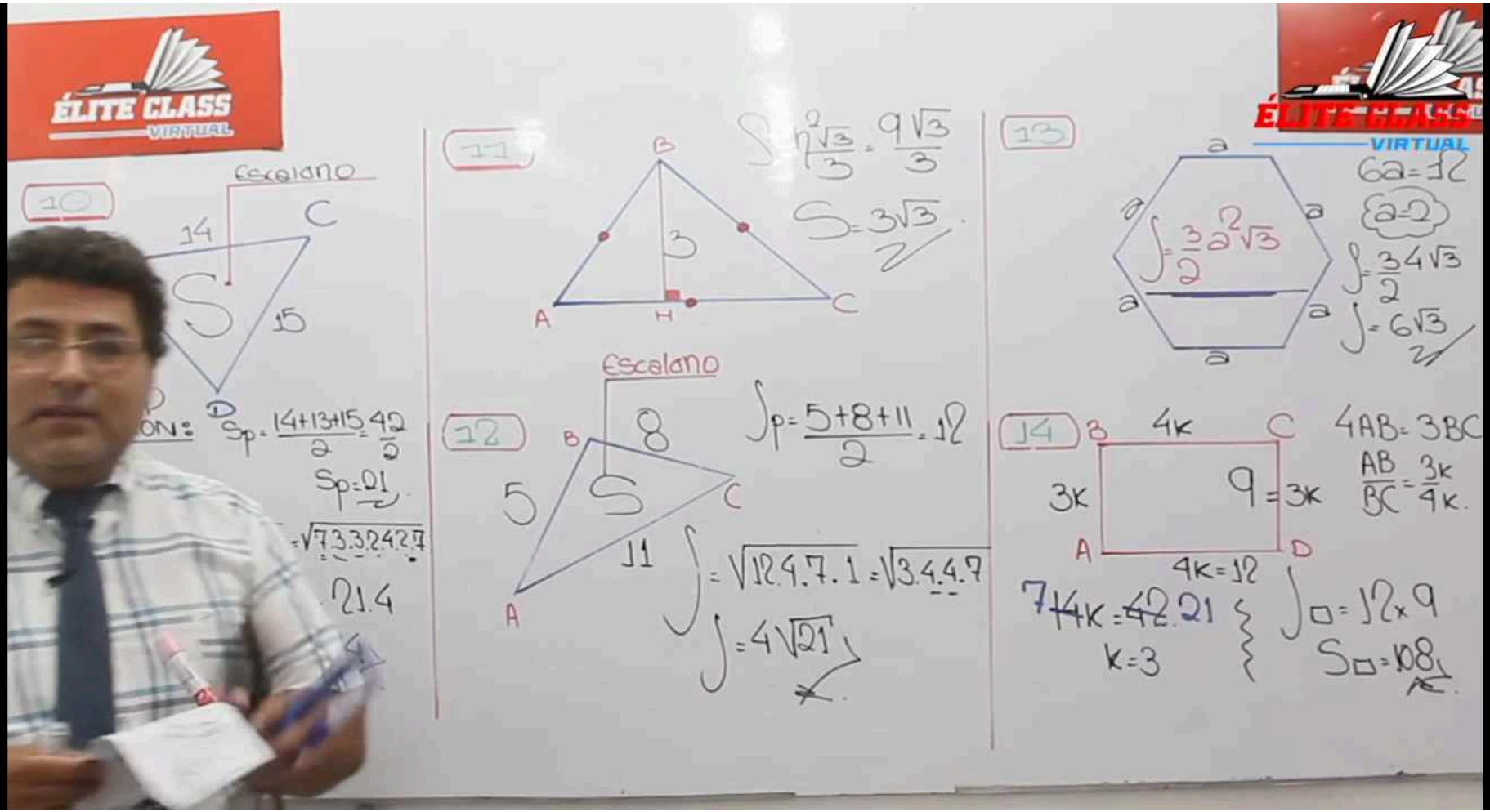
$S = \sqrt{12.4.7.1} = \sqrt{3.4.4.7}$

$S = 4\sqrt{21}$

13

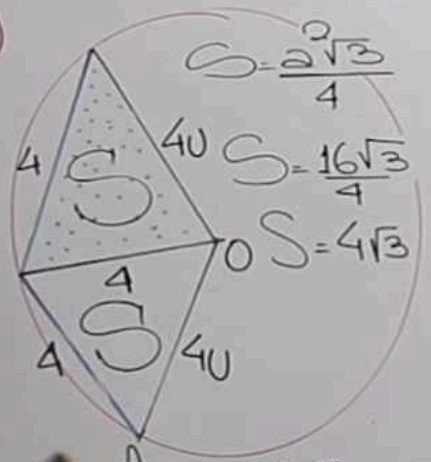


14


ÉLITE CLASS VIRTUAL
10
Escaleno
14
C
15
S
ON:
Sp = 14+13+15 / 2 = 42/2
Sp = 21
= √7.3.3.2.2.7
21.4
11
B
3
A
H
C
S = 3²√3 / 3 = 9√3/3
S = 3√3
12
Escaleno
8
B
5
S
C
A
11
p = 5+8+11 / 2 = 12
= √12.9.7.1 = √3.4.4.7
= 4√21
13
a
a
a
a
a
a
6a = 12
a = 2
= 3/2 a²√3
= 3/2 4√3
= 6√3
14
B
4k
C
3k
9 = 3k
A
D
4k = 12
7.4k = 42.21
k = 3
4AB = 3BC
AB/BC = 3k/4k
= 12 x 9
S□ = 108

ÉLITE CLASS VIRTUAL

15



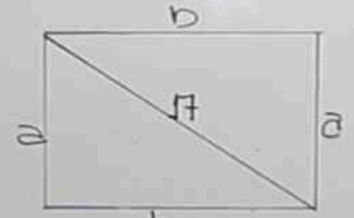
$S = \frac{a^2\sqrt{3}}{4}$

$S = \frac{16\sqrt{3}}{4}$

$S = 4\sqrt{3}$

$A_{ROMBO} = 8\sqrt{3}$

16



$2a + 2b = 46$

$(a+b)^2 = (23)^2$

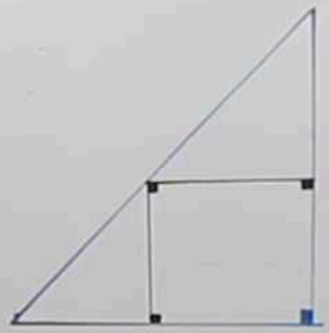
$\sqrt{7}^2 = a^2 + b^2$

$a^2 + 2ab + b^2 = 23^2$

$\sqrt{7}^2$

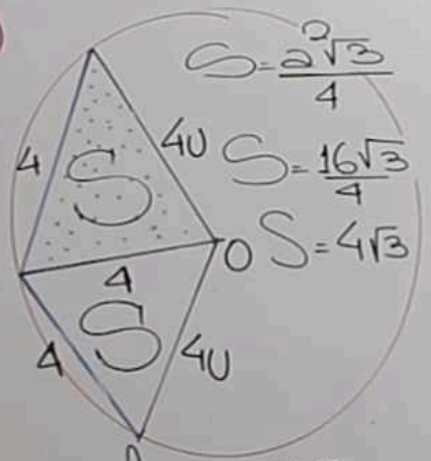
$2ab = 23^2 - \sqrt{7}^2 = (23+\sqrt{7})(23-\sqrt{7})$

$2A_{\square} = 40(6)^3 = 120^2$



ÉLITE CLASS VIRTUAL

15



$S = \frac{a^2\sqrt{3}}{4}$

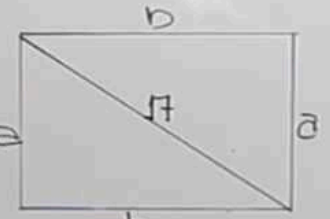
$S = \frac{16\sqrt{3}}{4}$

$S = 4\sqrt{3}$

$A_{ROMBO} = 8\sqrt{3}$

16

$A_{\square} = ab$



$2a + 2b = 46$ | $17^2 = a^2 + b^2$

$(a+b)^2 = (23)^2$

$a^2 + 2ab + b^2 = 23^2$

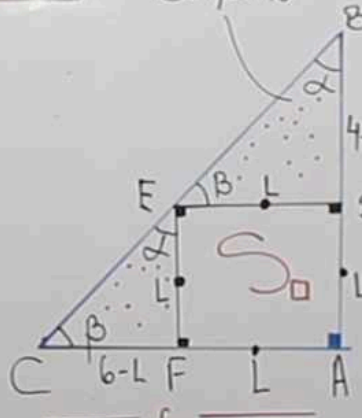
17^2

$2ab = 23^2 - 17^2 = (23+17)(23-17)$

$2A_{\blacksquare} = 40(6)^3 = 120^2$

17

$\alpha + \beta = 90$



$\frac{4-L}{L} = \frac{L}{6-L}$

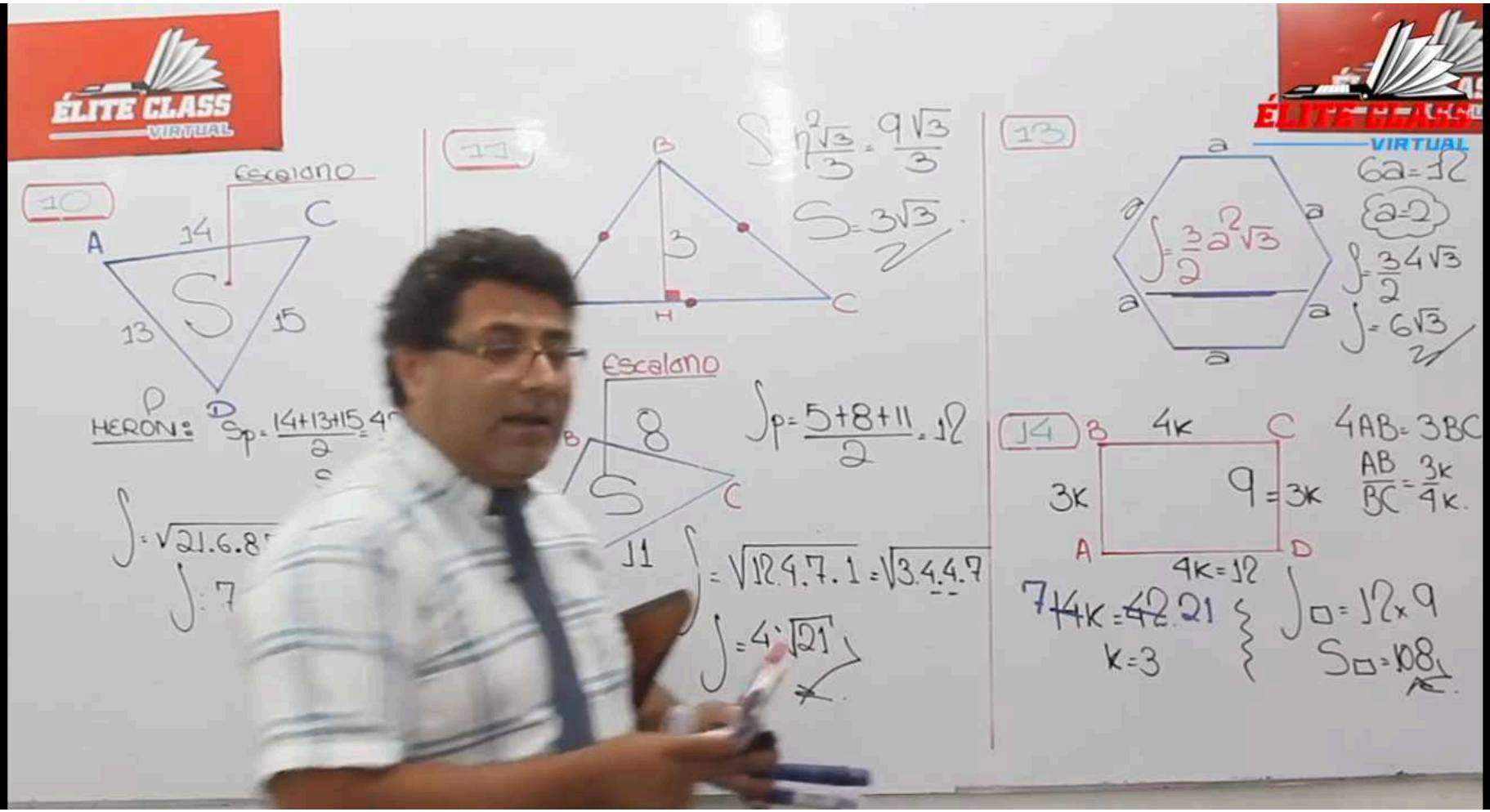
$(4-L)(6-L) = L^2$

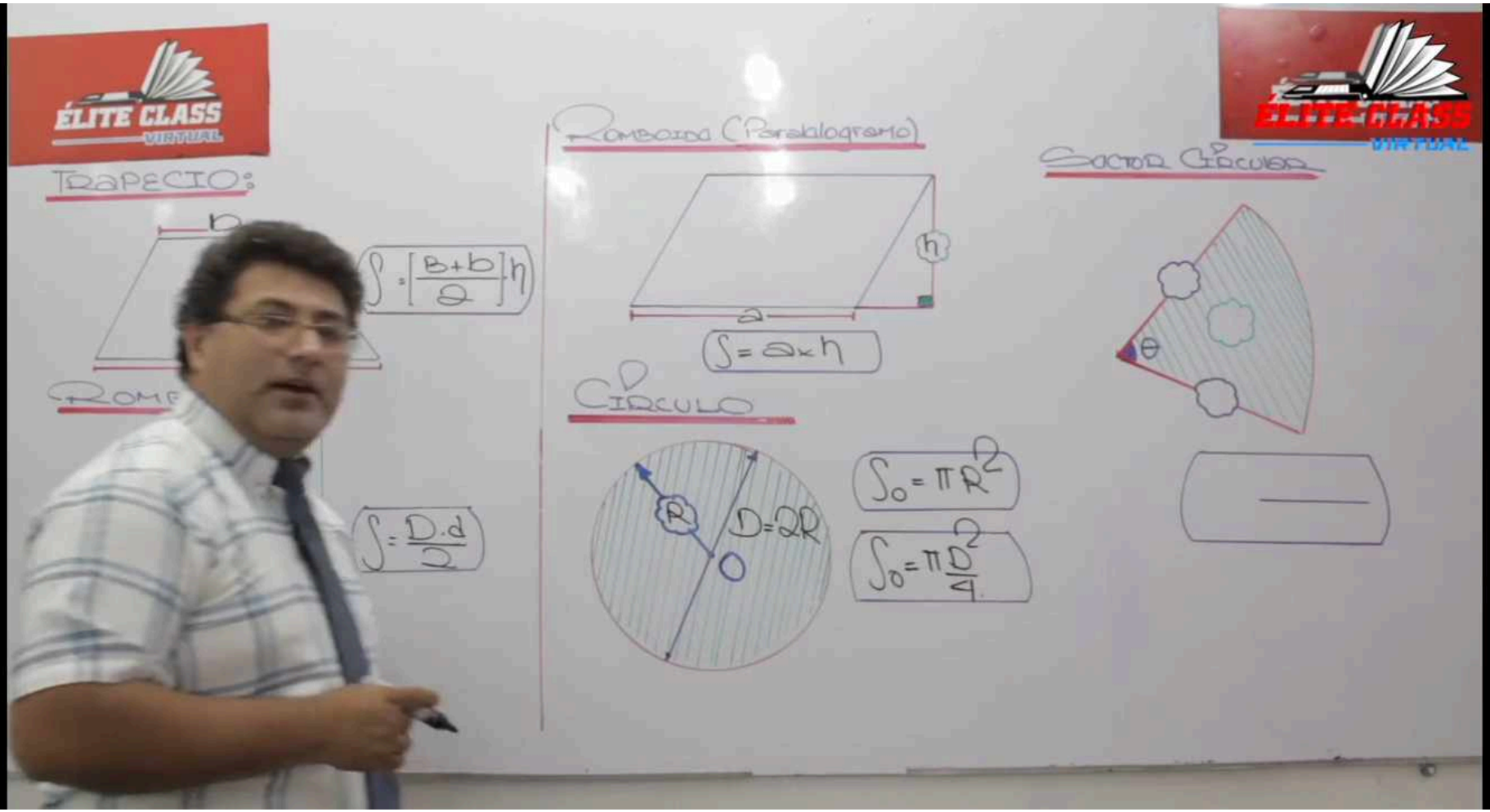
$24 - 10L + L^2 = L^2$

$24 = 10L$

$\frac{12}{5} = L$

$S_{\square} = \frac{144}{25} \times \frac{476}{100} = 4{,}76$


ÉLITE CLASS VIRTUAL
10
Escaleno
A
C
14
13
15
S
HERON:
11
B
3
H
C
Escaleno
8
B
S
C
11
13
a
a
a
a
a
a
VIRTUAL
6a=12
a=2
14
4AB=3BC
AB/BC=3k/4k
3k
9=3k
A
4k=12
D


ÉLITE CLASS
VIRTUAL
TRAPECIO:
b
$S = \left[\frac{B+b}{2}\right] h$
ROMB
$S = \frac{D \cdot d}{2}$
ROMBOIDE (Paralelogramo)
h
a
$S = a \times h$
CÍRCULO
R
D=2R
O
$S_o = \pi R^2$
$S_o = \pi \frac{D^2}{4}$
SECTOR CIRCULAR
θ