SOLUCIONARIO

EXAMEN PARCIAL - CICLO ACTUALIZACIÓN ESCOLAR
4TO AÑO DE SECUNDARIA

01

$(x-3)[1+1-x] \geq 0$

$(x-3)(x-2) \leq 0$

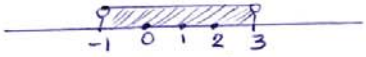
$\therefore CS = [2;3]$

B

02

$x^2 - 2x - 3 < 0$

$(x-3)(x+1) < 0$



$\therefore S \cap \mathbb{N} = \{1;2\}$

D

03

$1 - \frac{1}{x} < 0$

$\frac{x-1}{x} < 0$

$\Rightarrow S = \langle 0;1 \rangle$

I. F
II. F
III. V

C

04

I. V $(x-3)(x+1)=0$
$\Rightarrow x=-1 \vee x=3$

II. F $-2<x<3 \Rightarrow 0 \leq x^2 < 9$

III. V $x-1 \leq 0 \Rightarrow x \leq 1$

Rpta VFV

A

05

obs $x-1 \geq 0 \wedge 0 \leq 1-x \Rightarrow x=1$

$\Rightarrow D_f = \{1\}$

$R_f = \{f(1)\} = \{4\}$

D

06

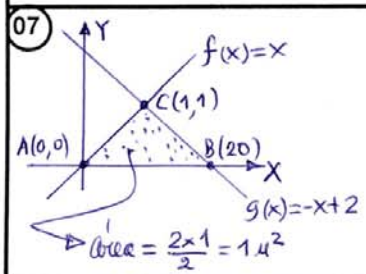
$D_{f+g} = D_f \cap D_g = \{2;-1;5\}$

$(f+g)(2) = 4$
$(f+g)(-1) = 11$
$(f+g)(5) = 2$

$\therefore \sum \text{elem de } R_{f+g} = 17$

A

07



$\text{área} = \frac{2 \times 1}{2} = 1\,u^2$

C

08

$x \in D_{g \circ h} \equiv x \in D_h \wedge h(x) \in D_g$

$\equiv 0 \leq x \leq 3 \wedge 1 \leq 3x+1 \leq 7$

$0 \leq x \leq 2$

$\Rightarrow D_{g \circ h} = [0;2]$

B

09

Prop $(x+10)^2 = (x+1)(x+46)$

$x^2 + 20x + 100 = x^2 + 47x + 46$

$54 = 27x$

$x = 2$

$\Rightarrow PG: 3, 12, 48, \ldots$

razón $= 4$

$t_5 = 3 \times 4^4 = 3 \times 256 = 768$

D

10

PA: $3 \underbrace{\ldots\ldots\ldots}_{5 \text{ Medios aritm}} 27$ (t_1 … t_7)

$\Rightarrow 27 = t_7$

$27 = 3 + 6r$

$\therefore r = 4$

D

11

$\vec{A} = 2\hat{i} + 10\hat{j}$

$\vec{B} = 5\hat{i} + 6\hat{j}$

$\vec{A} + \vec{B} = 7\hat{i} + 16\hat{j}$

C

12

$\vec{A} = 3\hat{i} + 4\hat{j}$

$\hat{\mu} = \frac{3\hat{i} + 4\hat{j}}{5}$

$\hat{\mu} = 0{,}6\hat{i} + 0{,}8\hat{j}$

B

13

$\Delta\vec{r} = 12\hat{i} + 12\hat{j}$

$\vec{V}_m = \frac{12\hat{i} + 12\hat{j}}{6}$

$\vec{V}_m = (2\hat{i} + 2\hat{j})\ m/s$

D

14

$X_2 = X_1 + vt$

$250 = X_1 + 15(5)$

$X_1 = 175\ m$

E

15

$V_2 = V_1 + at$

$3V_1 = V_1 + 4(5)$

$V_1 = 10\ m/s$

$\Delta x = 10(5) + \frac{1}{2}(4)(5)^2$

$\Delta x = 100\ m$

B

16

$\Delta y = V_0 t + \frac{1}{2} a t^2$

$\Delta y = 0 - 5(6)^2$

$\Delta y = 180\ m$

E

17

A

18

$NaNO_3 \Rightarrow x + (+1) + 3(-2) = 0$

$x = +5$

$NO_2^- \Rightarrow x + 2(-2) = -1$

$x = +3$

$NO_2 \Rightarrow x + 2(-2) = 0$

$x = +4$

C

19

$10{,}811 = \frac{10{,}0129(x) + 11{,}0093(100-x)}{100}$

$x = 19{,}9\%$

D

20

$320\,g\,SO_2 \times \frac{3N_A \text{ átomos}}{64\,g\,SO_2} = 15N_A$

C

21

$75\,g\,C_3H_8 \times \frac{8\ mol}{44\,g\,C_3H_8} = 13{,}6$

E

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22

$D = \frac{PM}{RT}$

$D = \frac{1,24 \times 46}{0,082 \times 323} = 2,15\ g/L$

B

23

$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$

$\frac{660 \times 280}{299} = \frac{880 \cdot V_2}{626,5}$

$V_2 = 440\ mL$

C

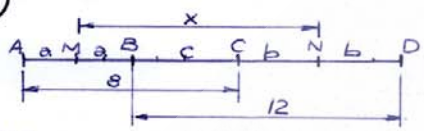
24

$P = \frac{mRT}{M \cdot V}$

$P = \frac{320 \times 0,082 \times 400}{80 \times 160} = 0,820\ atm$

D

25



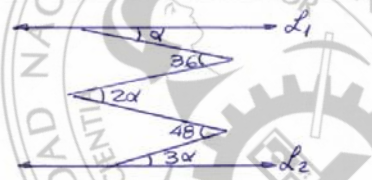
Del enunciado:

$2a + c = 8$
$2b + c = 12$ $\Rightarrow a + b + c = 10$

$\therefore MN = 10u$

A

26

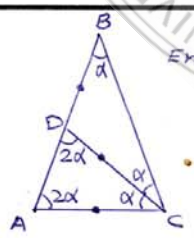


Por teorema $6\alpha = 84$

$\Rightarrow \alpha = 14$

C

27



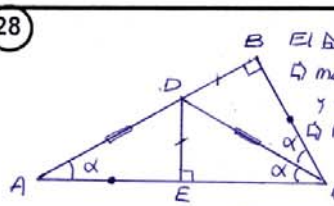
En el Triángulo ABC

$5\alpha = 180$

$\Rightarrow \alpha = 36$

E

28



El $\triangle AED \cong \triangle CBD$

$\Rightarrow m\angle DAE = m\angle DCB$

y $AD = DC$

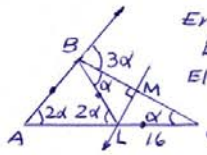
$\Rightarrow m\angle DCA = \alpha$

En el $\triangle ABC$: $3\alpha = 90$

$\Rightarrow \alpha = 30 = m\angle ACD$

B

29



En la figura:

$LB = LC = 16$

El $\triangle ABL$ es isósceles

$\Rightarrow AB = BL$

$\Rightarrow AB = 16u$

D

30

Del enunciado:

$S_{is} = 180(n-2) = 3960$

$n - 2 = 22$

$\Rightarrow n = 24$ lados

Luego: $N_D = \frac{n(n-3)}{2} = \frac{24(21)}{2}$

$N_D = 252$ diagonales

C

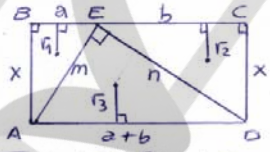
31

En el trapecio ABCD

$MN = \frac{AD + BC}{2} = \frac{18 + 8}{2} = 13u$

A

32



Del enunciado

$r_1 + r_2 + r_3 = 18$

Por el Teorema de Poncelet

$\triangle ABE$: $a + x = m + 2r_1$

$\triangle ECD$: $b + x = n + 2r_2$ $\Rightarrow x = r_1 + r_2 + r_3$

$\triangle AED$: $m + n = a + b + 2r_3$ $\Rightarrow AB = 18u$

E

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