COLEGIO ALMA'S
bilingual school

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Corrección Examen 3ª Evaluación Matemáticas 2ºESO - 08-06-2018

1.- a) $\begin{cases} 2x+3y=7 \\ 2x+y=5 \end{cases} \rightarrow x=\frac{7-3y}{2}$; $x=\frac{5-y}{2}$

$\frac{7-3y}{2}=\frac{5-y}{2}$ $\quad 7-3y=5-y$

$2y=2 \rightarrow \boxed{y=1}$

$x=\frac{5-1}{2} \rightarrow \boxed{x=2}$

b) $\begin{cases} x-3y=-8 \\ 3x+2y=-3 \end{cases}$ $\quad x=3y-8$; $x=\frac{-3-2y}{3}$

$3y-8=\frac{-3-2y}{3}$ $\quad mcm=3$

$9y-24=-3-2y$

$11y=21 \rightarrow \boxed{y=\frac{21}{11}}$

$x=\frac{63}{11}-8 \rightarrow \boxed{x=\frac{-25}{11}}$

2.- a) $\begin{cases} 3x+2y=7 \\ x-y=-1 \end{cases} \rightarrow x=y-1$

$3(y-1)+2y=7$

$3y-3+2y=7$

$5y=10 \rightarrow \boxed{y=2}$ $\quad x=2-1 \rightarrow \boxed{x=1}$

b) $\begin{cases} 2x-y=1 \\ 3x+y=9 \end{cases} \rightarrow y=9-3x$

$2x-(9-3x)=1 \rightarrow 2x-9+3x=1$

$5x=10$

$\boxed{x=2} \rightarrow y=9-3\cdot 2 \rightarrow \boxed{y=3}$

3.- a) $\begin{cases} x-5y=0 \\ 3x-2y=13 \end{cases} \begin{matrix} \cdot(-3) \\ \rightarrow \end{matrix}$ $\quad -3x+15y=0$

$3x-2y=13$

$13y=13 \rightarrow \boxed{y=1}$

$x-5=0 \rightarrow \boxed{x=5}$

b) $\begin{cases} 5x-7y=3 \\ 4x-3y=5 \end{cases} \begin{matrix} \cdot 3 \\ \cdot(-7) \end{matrix}$ $\quad 15x-21y=9$

$-28x+21y=-35$

$-13x=-26 \rightarrow \boxed{x=2}$

$10-7y=3$

$-7y=-7$

$\boxed{y=1}$

4.-

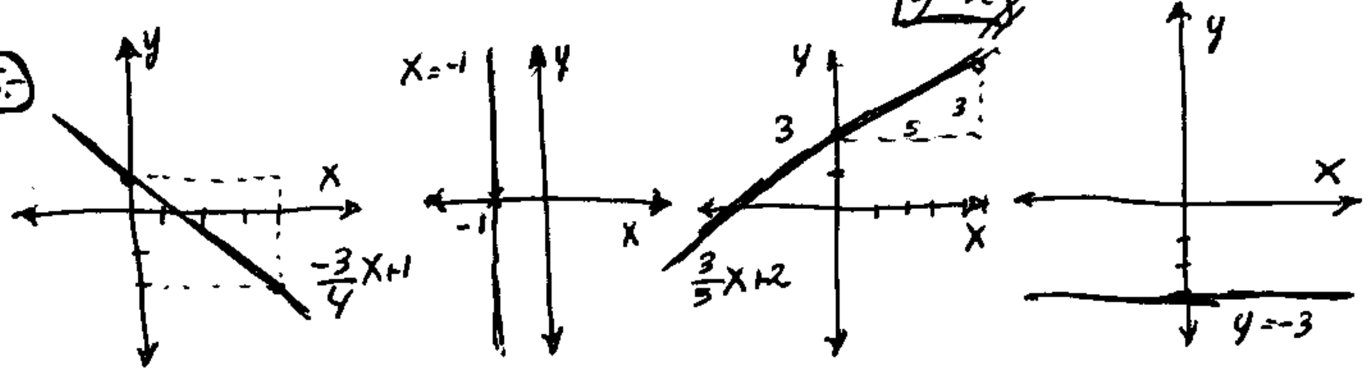
a) $\left.\begin{array}{l} x+2y=5 \\ 4x+y=13 \end{array}\right\} \cdot -2 \quad \begin{array}{l} x+2y=5 \\ -8x-2y=-26 \\ \hline -7x=-21 \end{array} \rightarrow \boxed{x=3}$

$3-2y=5$
$-2y=-2$
$\boxed{y=1}$

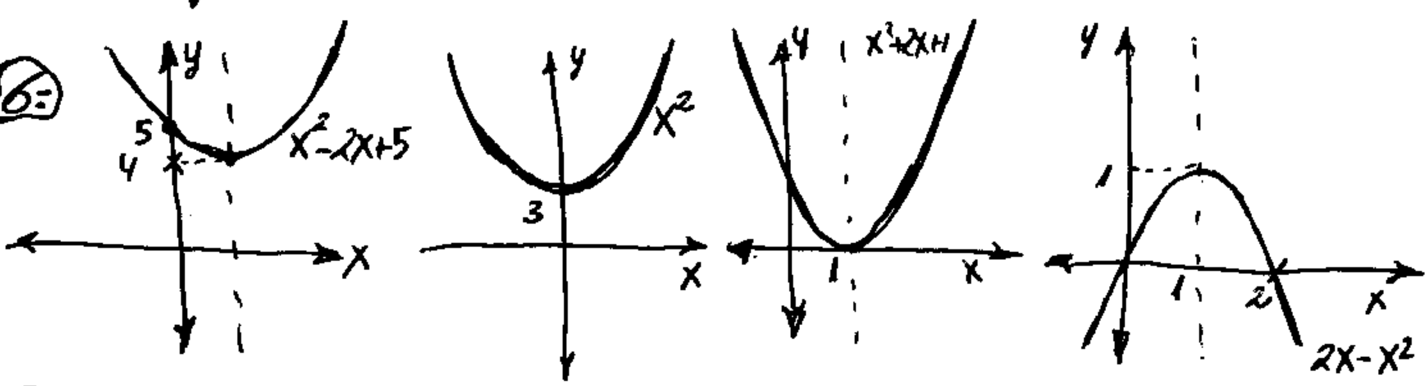
b) $\left.\begin{array}{l} 2x-y=4 \\ 3x+2y=13 \end{array}\right\} \times 2 \quad \begin{array}{l} 4x-2y=8 \\ 3x+2y=13 \\ \hline 7x=21 \end{array} \rightarrow \boxed{x=3}$

$6-y=4$
$-y=-2$
$\boxed{y=2}$

5.-

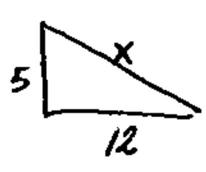


6.-

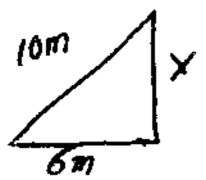


7.- $\frac{15}{x}=\frac{9}{3} \rightarrow \frac{15}{x}=\frac{3}{1} \rightarrow 3x=15 \rightarrow \boxed{x=5cm}$

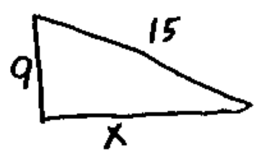
8.-



$x^2=5^2+12^2$
$x^2=25+144$
$x^2=169$
$x=\boxed{13\,m}$



$x^2+6^2=10^2$
$x^2=100-36$
$x^2=64 \rightarrow \boxed{x=8m}$



$x^2+81=225$
$x^2=144$
$\boxed{x=12}$

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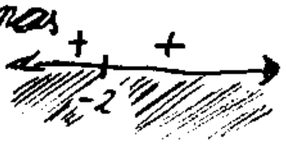
9.- Dom $f(x)$ = Cont $f(x)$ = Der $f(x)$ = $\mathbb{R}-\{-2\}$

Rec $f(x)$: $[1,\infty)$

Cortes → OX: no tiene; OY: $y=1$

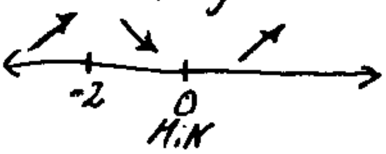
Asimétrico

Zonas



Asíntotas → AV: $x=-2$; AH: $y=2$; AO: $y=x$

Monotonía



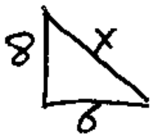
Curvatura

10.- $A=\frac{(5+3)2}{2}=$ **$8\,cm^2$**

11.- $A=\frac{2^2\sqrt{3}}{4}=$ **$\sqrt{3}\,cm^2$**

12.- $P=2\cdot\pi\cdot 6=$ **$12\pi\,m$** $\quad A=\pi\cdot 6^2=$ **$36\pi\,m^2$**

13.-



$x^2=8^2+6^2$

$x^2=64+36$

$x^2=100 \rightarrow x=10$

$A=\frac{16\cdot 12}{2}=$ **$96\,cm^2$**

$P=4\times 10=$ **$40\,cm$**

14.- $A=\frac{20\cdot 3}{2}=$ **$30\,cm^2$** (20: perímetro)

15.-

$V=\pi\cdot 3^2\cdot 5=$ **$45\pi\,m^3$**

$S=2\pi\cdot 3(3+5)=$ **$48\pi\,m^2$**

$V=\frac{4}{3}\pi\cdot 6^3=$ **$288\pi\,cm^3$**

$S=4\pi\cdot 6^2=$ **$144\pi\,cm^2$**

$V=9\cdot 6=$ **$54\,cm^3$**

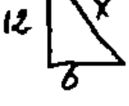
$S=2\square_3^3+4\square_3^6=18+72$

$S=$ **$90\,cm^2$**

$V=\frac{\pi\cdot 6^2\cdot 12}{3}=$ **$144\pi\,cm^3$**

$S=\pi\cdot 6(6+6\sqrt{5})$

$=$ **$36\pi+36\pi\sqrt{3}\,cm^2$**



$\rightarrow x^2=12^2+6^2=180$

$x=6\sqrt{5}$