Corrección 1er Control 1ª Evaluación Matemáticas I 1º Bachillerato 06-10-17

1.- $\frac{2\sqrt{2}-\sqrt{3}}{2\sqrt{2}+\sqrt{3}}\cdot\frac{2\sqrt{2}-\sqrt{3}}{2\sqrt{2}-\sqrt{3}} = \frac{8-4\sqrt{6}+3}{8-3} = \boxed{\frac{11-4\sqrt{6}}{5}}$

$\frac{10}{\sqrt[3]{2^2}}\cdot\frac{\sqrt[3]{2}}{\sqrt[3]{2}} = \boxed{5\sqrt[3]{2}}$

$\sqrt[5]{2^3}\cdot\sqrt{2^3} = \sqrt[10]{2^6 2^{15}} = \boxed{4\sqrt[10]{2}}$

$\sqrt[3]{2} - 3\sqrt[3]{8} - 4\sqrt[3]{2} = \boxed{-6\sqrt[3]{2}}$

2.- $\log_{1/27} 9^{2x-1} = -1 \rightarrow 9^{2x-1} = 27^{-1} \rightarrow 3^{4x-2} = 3^{-3} \rightarrow 4x-2 = -3 \rightarrow \boxed{x = -1/4}$

$\log_x 9 = -1 \rightarrow x^{-1} = 9 \rightarrow \boxed{x = 1/9}$

3.- a) $3x^3+12x^2+3x-18 = \boxed{3(x-1)(x+2)(x+3)}$

	1	4	1	−6
1		1	5	6
	1	5	6	0

$x = 1, -2, -3$

b) $2x^3-2^4x+32 = \boxed{2(x-2)^2(x+4)}$

	1	0	−12	16
2		2	4	−16
	1	2	−8	0

$x = 2, -4$

4.- $\frac{x^3-x^2-17x-15}{x-3} = \boxed{x^2+2x-11-\frac{48}{x-3}}$

	1	−1	−17	−15
3		3	6	−33
	1	2	−11	−48

5.- a) $x^3+3x^2+3x+1-x^3+3x^2-3x+1 = 7$

$6x^2-5=0 \rightarrow x^2 = 5/6 \rightarrow \boxed{x = \pm\sqrt{30}/6}$

b)

	1	1	−16	20
−5		−5	20	−20
	1	−4	4	0

$\boxed{x=-5}$

$x^2-4x+4=0 \rightarrow (x-2)^2=0 \rightarrow \boxed{x=2}$

c) $x^2 = \frac{10\pm\sqrt{100-36}}{2} = \frac{10\pm 8}{2}$

$x^2 = 9 \rightarrow \boxed{x=\pm 3}$

$x^2 = 1 \rightarrow \boxed{x=\pm 1}$

d) $mcm = (x+3)(x-3)$

$x-3+1 = x+3 \rightarrow 0x = 5 \rightarrow$ Sin solución

e) $(x-1)^2 = (\sqrt{x^2+25})^2 \rightarrow x^2-2x+1 = x^2+25 \rightarrow -2x = 24 \rightarrow \boxed{x=-12}$ no válida

f) $(\sqrt{x+6})^2 = (6-\sqrt{x})^2$

$x+6 = 36-12\sqrt{x}+x \rightarrow 12\sqrt{x} = 30$

$4x = 25 \rightarrow \boxed{x = 25/4}$