4º ESO. FRACCIONES ALGEBRAICAS Y ECUACIONES

1. Efectúa las operaciones indicadas y simplifica

	A	B
1	$\frac{x-2}{x-3}-\frac{2x^2+x-13}{x^2+2x-15}+\frac{x+1}{x+5}$	$\frac{3}{2x-4}-\frac{1}{x+2}-\frac{x+10}{2x^2-8}$
2	$\frac{1+x}{1-x}+\frac{1-x}{1+x}-\frac{1-x+x^2}{1+x^2}-\frac{1+x+x^2}{1-x^2}+2$	$\left(\frac{1}{1+x}+\frac{2x}{1-x^2}\right)\cdot\left(\frac{1}{x}-1\right)$
3	$\frac{x^2+3x+2}{x^2-4x+4}\cdot\frac{x^2-3x+2}{x^2+x-2}\cdot\frac{x^2-x-2}{x^2+2x+1}$	$\frac{a^2+ab+ax+bx}{a^2-ab-ax+bx}\div\frac{a^2-x^2}{a^2-b^2}$
4	$\left(x^2-x+\frac{1}{x}-\frac{1}{x^2}\right)\div\left(x-1+\frac{1}{x}\right)$	$\frac{3x-6x^2}{1-9x+18x^2}\cdot\frac{1-8x^3}{(1-2x)^2}\div\frac{3+6x+12x^2}{1+3x-18x^2}$
5	$\frac{\frac{x}{y^2}+\frac{y}{x^2}}{\frac{1}{x^2}-\frac{1}{xy}+\frac{1}{y^2}}$	$\frac{\frac{a+1}{a-1}-\frac{a-1}{a+1}}{\frac{a^2+4a-1}{a^2-1}-1}$

2. Resuelve las siguientes ecuaciones:

	A	B
1	$\frac{13+6x}{15}-\frac{3x+5}{5x-25}=\frac{2x}{5}$	$\frac{x+8}{x-1}-\frac{x+4}{x+1}=\frac{12x}{x^2-1}$
2	$\frac{3x-4}{5x-16}=\frac{4x+1}{6x-11}$	$\frac{2}{x+1}=\frac{x}{x-1}-1$
3	$x+\frac{x+4}{5}=1+\frac{x}{2}$	$\frac{x}{x+1}+\frac{x+1}{x}=\frac{13}{6}$
4	$\frac{15}{x-2}-\frac{12x+6}{2x^2-8}=\frac{18}{x+2}$	$\frac{20}{x+1}+\frac{5x-5}{x^2-1}=\frac{52}{x-1}-\frac{40}{x+1}$
5	$\frac{x}{a}-\frac{x}{b}=a-b$	$\frac{2x-1}{x+1}-\frac{x-7}{x-1}=4-\frac{3x-1}{x+2}$
6	$\frac{x-3}{x-2}+\frac{2x-5}{x^2+x-6}=\frac{x+2}{x+3}$	$\frac{1}{x-a}+\frac{1}{x+a}=\frac{1}{x^2-a^2}$
7	$\frac{3(2x-1)}{2x+1}-\frac{2(2x+1)}{2x-1}-5=0$	$\frac{a+b}{ab}=\frac{1}{a+b+x}-\frac{1}{x}$
8	$\frac{x}{b(a+b)}+\frac{a}{(a+b)x}=\frac{1}{b}$	$\frac{(x-a-b)\cdot 4x}{a+b+c}+a+b=c$
9	$\frac{\frac{1}{3}\left(x+\frac{1}{4}\right)}{x+\frac{1}{5}}+\frac{\frac{1}{6}\left(x+\frac{1}{5}\right)}{x+\frac{1}{4}}=\frac{1}{3}+\frac{1}{6}$	$\frac{\frac{1}{2}+\frac{x}{4}}{\frac{1}{3}}+\frac{\frac{1}{4}+\frac{x}{16}}{\frac{1}{5}}-\frac{\frac{1}{6}+\frac{x}{36}}{\frac{1}{7}}=2$
10	$\frac{(a+b)x}{a-b}+\frac{1}{a+b}=\frac{2}{a^2-b^2}-\frac{1}{b-a}-\frac{(a-b)x}{a+b}$	
11	$\frac{1}{1+\frac{1}{x+\frac{1}{2}}}=\frac{1}{1+\frac{1}{1+\frac{1}{3}}}$	$\frac{1}{1+\frac{1}{1+\frac{1}{x}}}=\frac{x}{2}+1$