SOLVING ALGEBRAIC FRACTIONS

Task 1 – Solve each of the following equations. Show clear algebraic working. Do not use trial and error.

1) $\frac{x}{4}+\frac{x}{3}=7$

2) $\frac{2x-1}{3}+\frac{x}{6}=5$

3) $\frac{4}{5x}+\frac{5}{2x}=12$

4) $\frac{x+2}{5}-\frac{x-1}{2}=0$

5) $\frac{10}{y+1}-7=2$

6) $\frac{4}{z}+\frac{2}{3z}=7$

7) $\frac{5}{x+2}=\frac{3}{x}$

8) $\frac{a}{2}=\frac{8}{a}$

9) $b+\frac{6}{b}=5$

10) $\frac{x+2}{3}-\frac{4-x}{8}=\frac{19}{15}$

11) $\frac{1}{x-3}+\frac{1}{x+3}=\frac{10}{x^2-9}$

12) $\frac{2-3w}{2}=\frac{1}{5}-\frac{3w-2}{3}$

13) $\frac{6}{x+2}+\frac{4}{x+5}=1$

14) $\frac{3}{x+1}+\frac{2}{x+4}=1$

15) $\frac{4}{x+1}+\frac{6}{x+3}=2$

16) $\frac{2}{x+1}+\frac{3}{x+2}=1$

17) $\frac{x+3}{x-1}+\frac{x-2}{x+2}=3$

18) $\frac{x^2-1}{x+1}=5$

19) $\frac{3x^2+14x-5}{3x-1}=7$

Challenge – Solve each of the following equations. Show clear algebraic working. Do not use trial and error.

20) $\frac{1}{x-1}+\frac{2}{x-2}=\frac{3}{x-3}$

21) $\frac{3}{x^2-3x}+\frac{4}{x^2-4x}=0$

22) $\frac{10x^2-10x}{5x^2-x-6}\div\frac{2x-2}{x-2}=1$

23) $\frac{12x^2-12x}{3x^2-x-2}\div\frac{x-1}{x+1}+8=10$

24) $\frac{6x^2-6x}{3x^2-x-2}-\left(\frac{1}{3x+2}+\frac{1}{x-1}\right)=\frac{1}{3x+2}$