Algebraic Fractions - Past Paper Questions

1. Express as a single fraction in its simplest form: $\frac{1}{p} + \frac{2}{p+5}$ 　　　　2

2. a) Factorise: $4x^2 - y^2$ 　　　　1

    b) Hence simplify: $\frac{4x^2 - y^2}{6x+3y}$ 　　　　2

3. Simplify: $\frac{3}{m} + \frac{4}{(m+1)}$ 　　　　3

4. a) Factorise: $p^2 - 4q^2$ 　　　　1

    b) Hence simplify: $\frac{p^2 - 4q^2}{3p+6q}$ 　　　　2

5. Simplify: $\frac{(x+4)^2}{x^2 - x - 20}$ 　　　　3

6. Simplify: $\frac{x^6}{y^2} \times \frac{y^3}{x^3}$ 　　　　2

7. Express $\frac{3}{x+2} + \frac{5}{x-1}$ $x \neq -2, x \neq 1$ as a fraction in its simplest form. 　　　　3

8. Express as a single fraction $\frac{a}{b} + \frac{b}{a}$, $a \neq 0, b \neq 0$ 　　　　2

9. Simplify: $\frac{3x - 15}{(x-5)^2}$ 　　　　2

10. Express $\frac{3}{x} - \frac{4}{x+1}$ $x \neq 0, x \neq -1$ as a single fraction in its simplest form. 　　　　3

11. Express $\frac{s^2}{t} \times \frac{3t}{2s}$ as a fraction in its simplest form. 　　　　2

12. Express $\frac{2}{x-1} + \frac{4}{x+2}$ $x \neq 1, x \neq -2$ as a single fraction in its simplest form. 　　　　3

13. Express $\frac{2}{a} - \frac{3}{(a+4)}$ $a \neq 0, a \neq -4$ as a single fraction in its simplest form. 　　　　3

14. Simplify: $\frac{(2x+5)^2}{(2x-1)(2x+5)}$ 　　　　1

15. Express $\frac{5p^2}{8} \div \frac{p}{2}$ as a fraction in its simplest form. 　　　　3

16. Express $\frac{3}{(x+1)} - \frac{1}{(x-2)}$ $x \neq -1, x \neq 2$ as a single fraction in its simplest form. 　　　　3

17. Express $\frac{a}{b} \times \frac{3b}{a^2}$ as a fraction in its simplest form. 　　　　2

18. Express $\frac{4}{(x+3)} + \frac{3}{x}$ $x \neq -3, x \neq 0$ as a single fraction in its simplest form. 　　　　3

19. Simplify: $\dfrac{2x + 2}{(x + 1)^2}$ 2

20. Express $\dfrac{a}{x} - \dfrac{b}{y}$ $x \neq 0, y \neq 0$ as a fraction in its simplest form.   2

21. Express $\dfrac{1}{x^2} + \dfrac{1}{x}$ $x \neq 0$ as a fraction in its simplest form.   2

22. a)i)   Factorise: $3y^2 - 6y$ 1
    a)ii)   Factorise: $y^2 + y - 6$ 2

    b)   Hence express $\dfrac{3y^2 - 6y}{y^2 + y - 6}$ 2

23. Express $\dfrac{7}{x + 5} - \dfrac{3}{x}$ $x \neq -5, x \neq 0$ as a single fraction in its simplest form.   3

24. Simplify: $\dfrac{x^2 - 4x}{x^2 + x - 20}$ 3

25. Express $\dfrac{5t}{s} \div \dfrac{t}{2s^2}$ in its simplest form.   3