ALGEBRAIC FRACTIONS - PAST PAPER QUESTIONS - ANSWERS

1. $\frac{1}{p} + \frac{2}{p+5}$

$\frac{(p+5)}{p(p+5)} + \frac{2p}{p(p+5)}$

$\frac{p+5+2p}{p(p+5)}$

$\frac{3p+5}{p(p+5)}$

2a) $(2x+y)(2x-y)$

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

$\frac{(2x+y)(2x-y)}{3(2x+y)}$

$\frac{(2x-y)}{3}$

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

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

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

$\frac{7m+3}{m(m+1)}$

4.a) $(p+2q)(p-2q)$

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

$\frac{(p+2q)(p-2q)}{3(p+2q)}$

$\frac{(p-2q)}{3}$

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

$\frac{(x+4)^2}{(x+4)(x-5)}$

$\frac{(x+4)}{(x-5)}$

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

$\frac{x^3}{y^2} \times \frac{y^3}{1}$

$\frac{x^3}{1} \times \frac{y}{1}$

x^3y

7. $\frac{3}{x+2} + \frac{5}{x-1}$

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

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

$\frac{3x-3+5x+10}{(x+2)(x-1)}$

$\frac{8x+7}{(x+2)(x-1)}$

8. $\frac{a}{b} + \frac{b}{a}$

$\frac{a^2}{ab} + \frac{b^2}{ab}$

$\frac{a^2+b^2}{ab}$

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

$\frac{3(x-5)}{(x-5)^2}$

$\frac{3}{(x-5)}$

10. $\frac{3}{x} - \frac{4}{x+1}$

$\frac{3(x+1)}{x(x+1)} - \frac{4x}{x(x+1)}$

$\frac{3x+3-4x}{x(x+1)}$

$\frac{3-x}{x(x+1)}$

11. $\frac{s^2}{t} \times \frac{3t}{2s}$

$\frac{s}{t} \times \frac{3t}{2}$

$\frac{s}{1} \times \frac{3}{2}$

$\frac{3s}{2}$

12. $\frac{2}{x-1} + \frac{4}{x+2}$

$\frac{2(x+2)}{(x-1)(x+2)} + \frac{4(x-1)}{(x-1)(x+2)}$

$\frac{2(x+2)+4(x-1)}{(x-1)(x+2)}$

$\frac{2x+4+4x-4}{(x-1)(x+2)}$

$\frac{6x}{(x-1)(x+2)}$

13. $\frac{2}{a} - \frac{3}{(a+4)}$

$\frac{2(a+4)}{a(a+4)} - \frac{3a}{a(a+4)}$

$\frac{2(a+4)-3a}{a(a+4)}$

$\frac{2a+8-3a}{a(a+4)}$

$\frac{8-a}{a(a+4)}$

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

$\frac{(2x+5)}{(2x-1)}$

15. $\frac{5p^2}{8} \div \frac{p}{2}$

$\frac{5p^2}{8} \times \frac{2}{p}$

$\frac{10p^2}{8p}$

$\frac{5p}{4}$

16. $\frac{3}{(x+1)} - \frac{1}{(x-2)}$

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

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

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

$\frac{2x-7}{(x+1)(x-2)}$

17. $\frac{a}{b} \times \frac{3b}{a^2}$

$\frac{a}{1} \times \frac{3}{a^2}$

$\frac{1}{1} \times \frac{3}{a}$

$\frac{3}{a}$

18. $\frac{4}{(x+3)} + \frac{3}{x}$

$\frac{4x}{x(x+3)} + \frac{3(x+3)}{x(x+3)}$

$\frac{4x+3(x+3)}{x(x+3)}$

$\frac{4x+3x+9}{x(x+3)}$

$\frac{7x+9}{x(x+3)}$

19. $\frac{2x+2}{(x+1)^2}$

$\frac{2(x+1)}{(x+1)^2}$

$\frac{2}{(x+1)}$

20. $\frac{a}{x} - \frac{b}{y}$

$\frac{ay}{xy} - \frac{bx}{xy}$

$\frac{ay-bx}{xy}$

21. $\frac{1}{x^2} + \frac{1}{x}$

$\frac{1}{x^2} + \frac{x}{x^2}$

$\frac{1+x}{x^2}$

22.ai) $3y(y-2)$

aii) $(y+3)(y-2)$

b) $\frac{3y^2-6y}{y^2+y-6}$

$\frac{3y(y-2)}{(y+3)(y-2)}$

$\frac{3y}{(y+3)}$

23. $\frac{7}{x+5} - \frac{3}{x}$

$\frac{7x}{x(x+5)} - \frac{3(x+5)}{x(x+5)}$

$\frac{7x-3(x+5)}{x(x+5)}$

$\frac{7x-3x-15}{x(x+5)}$

$\frac{4x-15}{x(x+5)}$

24. $\frac{x^2-4x}{x^2+x-20}$

$\frac{x(x-4)}{(x+5)(x-4)}$

$\frac{x}{(x+5)}$

25. $\frac{5t}{s} \div \frac{t}{2s^2}$

$\frac{5t}{s} \times \frac{2s^2}{t}$

$\frac{5}{s} \times \frac{2s^2}{1}$

$\frac{5}{1} \times \frac{2s}{1}$

$10s$