

Algebraic Fractions

1) Simplify $\frac{2}{y^2-x^2} + \frac{3}{y-x}$

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

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

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

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

2) Simplify $\frac{x-1}{x^2+7x+12} \times \frac{x+4}{x^2+6x+9}$

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

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

$$C = \frac{x+1}{(x+3)^3}$$

$$D = \frac{x-1}{(x-3)^3}$$

3) Simplify $\frac{x+1}{x^2+3x+2} + \frac{x+2}{x^2+2x+1}$

$$A = \frac{2x^2+6x+5}{(x+1)^2(x+2)^2}$$

$$B = \frac{x^2+6x+5}{(x+1)^2(x+2)}$$

$$C = \frac{2x^2+x+5}{(x+1)^2(x+2)}$$

$$D = \frac{2x^2+6x+5}{(x+1)^3(x+2)}$$

4) Find the quotient and remainder when $2x^3 - 5x^2 + 8$ is divided by $2x - 3$

Quotient:

$$A = x^2 + x - \frac{3}{2}$$

$$B = x^2 - x + \frac{3}{2}$$

$$C = x^2 - 2x - \frac{3}{2}$$

$$D = x^2 - x - \frac{3}{2}$$

Remainder:

$$A = 7$$

$$B = \frac{7}{2}$$

$$C = -7$$

$$D = -\frac{7}{2}$$

5) When $7x^4 \div 3x^3 - x^2 + 3x - 2$ is divided by $x - a$,

the result is $7x^3 + 25x^2 + 99x + 399 + \frac{1594}{x-a}$

What is a ?

6) When $ax^5 - 6x^3 + 9x + 1$ is divided by $ax + 3$ the result is

$$x^4 - \frac{3x^3}{2} - \frac{3x^2}{4} + \frac{9x}{8} + \frac{45}{16} - \frac{119}{16(ax+3)}$$

What is a ?