Maths : Algebra

1. The father's age is six times his son's age. Six years hence the age of father will be four times his son's age. Find the present ages (in years) of the son and father.

2. Solve $1/2x + 1/4y - 1/3z = 1/4$;
$1/x=1/3y$;
$1/x - 1/5y + 4/z=2\ ^{2}/5$.

3. Find the GCD of each pair of polynomials
(x^3+y^3), $(x^4+x^2y^2+y^4)$ whose LCM is $(x^3+y^3) (x^2+xy+y^2)$.

4. If $X = a^2+3a-4 / 3a^2-3$
$Y = a^2+2a-8 / 2a^2-2a-4$
find the value of x^2y-2(y power minus two)

5. Pari needs 4 hours to complete a work. His friend Yuvan needs 6 hours to complete the same work. How long will it take to complete if they work together?

6. Find the values of a and b if the polynomials are perfect square
$ax^4+bx^3+361x^2+220x+100$

7. A girl is twice as old as her sister. Five years hence, the product of their ages (in years) will be 375. Find their present ages.

8. The roots of the equation $x^2+6x-4=0$ are α, ß. Find the quadratic equation whose roots are
i) α^2 and $ß^2$
ii) $2/\alpha$ and $2/ß$
iii) $\alpha^2 ß$ and $ß^2\alpha$
(α - alpha ; ß - beta)