Τεστ Παραγοντοποίηση / Α' ομάδα

1. $30y^3+25y^2 = 5\cdot 6\cdot y\cdot y^2 + 5\cdot 5\cdot y^2 = 5y^2\cdot(6y+5)$

2. $12x^2+6x = 2\cdot 6\cdot x\cdot x + 6x\cdot 1 = 6x\cdot(2x+1)$

3. $4\alpha^2\beta+8\alpha\beta^2-6\alpha\beta = 2\cdot 2\cdot\alpha\cdot\alpha\beta + 2\cdot 4\cdot\alpha\beta\cdot\beta - 2\cdot 3\cdot\alpha\beta$

$= 2\alpha\beta\cdot(2\alpha+4\beta-3)$

4. $15(x-1)\cdot y + 5(x-1)\cdot w = 3\cdot 5\cdot(x-1)\cdot y + 5\cdot(x-1)\cdot w$

$= 5\cdot(x-1)\cdot(3y+w)$

5. $x^2-25 = x^2-5^2 = (x-5)\cdot(x+5)$

6. $7\alpha(x-1)+14\beta(1-x) = 7\cdot\alpha\cdot(x-1) - 2\cdot 7\cdot\beta\cdot(x-1)$

$= 7\cdot(x-1)\cdot(\alpha-2\beta)$

7. $36x^2-9 = (6x)^2-3^2 = (6x-3)(6x+3)$

8. $4x^2-16y^2 = (2x)^2-(4y)^2 = (2x-4y)(2x+4y)$

$= (2\cdot x - 2\cdot 2\cdot y)(2x+2\cdot 2\cdot y) = 2\cdot(x-2y)\cdot 2\cdot(x+2y)$

$= 4\cdot(x-2y)\cdot(x+2y)$

9. $3\alpha^2-12\beta^2 = 3\cdot\alpha^2 - 3\cdot 4\beta^2 = 3\cdot(\alpha^2-4\beta^2) = 3[\alpha^2-(2\beta)^2]$

$= 3(\alpha-2\beta)\cdot(\alpha+2\beta)$

10. $y^2-10y+25 = y^2-2\cdot y\cdot 5+5^2 = (y-5)^2$

11. $x^2+x\cdot y+\beta x+\beta y = x\cdot x + x\cdot y + \beta x + \beta y$

$= x\cdot(x+y)+\beta\cdot(x+y)$

$= x\cdot(x+y)+\beta\cdot(x+y)$

$= (x+y)\cdot(x+\beta)$

12. $x^2 - 2xy + y^2 - x + y = (x^2 - 2xy + y^2) - (x - y)$

$= (x-y)^2 - (x-y)$

$= (x-y)\cdot(x-y) - (x-y)\cdot 1$

$= (x-y)\cdot[(x-y) - 1]$

$= (x-y)(x-y-1)$

13. $a^2b^2 - 4b^2 - a^2 + 4 = (a^2\cdot b^2 - 4b^2) - (a^2 - 4)$

$= b^2\cdot(a^2-4) - (a^2-4)\cdot 1$

$= (a^2-4)\cdot(b^2-1)$

$= (a^2 - 2^2)\cdot(b^2 - 1^2)$

$= (a-2)\cdot(a+2)\cdot(b-1)(b+1)$

14. $3y^2 + 24y + 48 = 3\cdot y^2 + 3\cdot 8\cdot y + 3\cdot 16$

$= 3\cdot(y^2 + 8y + 16)$

$= 3(y^2 + 2\cdot y\cdot 4 + 4^2)$

$= 3(y+4)^2$

15. $a^2 + 2ab + b^2 - \gamma^2 = (a^2 + 2ab + b^2) - \gamma^2$

$= (a+b)^2 - \gamma^2$

$= [(a+b) - \gamma]\cdot[(a+b) + \gamma]$

$= (a+b-\gamma)\cdot(a+b+\gamma)$.