FPE 6 Corrections

10)
$$16 x^8 - 81 y^4$$

= $(4 x^4 - 9 y^2)^9 (4 x^4 + 9 y^2)$
= $(2 x^2 + 3 y)(2 x^2 - 3 y)(4 x^4 + 9 y^2)$

12)
$$(\eta^2 - (\eta - 2)^2)(\eta^2 + (\eta - 2)^2)$$

= $(\eta - \eta - 2)(\eta + \eta - 2)(\eta^2 + (\eta - 2)^2)$
= $2(\eta - 2)(\eta^2 + (\eta - 2)^2)$
= $8(\eta^2 - 2\eta + 2)(\eta - 1)$

25)
$$(\chi^2 - 3\chi - (\chi - 3))(\chi^2 - 3\chi + (\chi - 3))$$

= $(\chi^2 - 4\chi + 3)(\chi^2 - 2\chi - 3)$
= $(\chi - 1)(\chi - 3)(\chi + 1)(\chi + 3)$
= $(\chi - 3)^2(\chi + 1)(\chi - 1)$