

Alunno: _____

10.04.2015
prof. Mimmo Corrado
Tempo 60 minuti

A. Scomponi in fattori i seguenti polinomi:

1. $18x^2y + 12x$
2. $20x^4 + 30x^2y^3 - 40x^3y$
3. $x^4 - x^3 - x + 1$
4. $a^2b + ab^2 + a + b$
5. $x^2 - xy + 2x - 2y$
6. $4a^2y^4 - 1$
7. $x^2 - (y + 5)^2$
8. $4a^2 - 12ab + 9b^2$
9. $x^9 + y^9$
10. $8x^3 - 36x^2 + 54x - 27$
11. $4x^2 - 4xy - 12x + y^2 + 6y + 9$
12. $x^6 - y^{12}$
13. $x^2 + 8x + 12$
14. $2a^2 - 7a + 5$

Soluzione

A. Scomponi in fattori i seguenti polinomi:

1. $18x^2y + 12x = 6x \cdot (3xy + 2)$

2. $20x^4 + 30x^2y^3 - 40x^3y = 10x^2 \cdot (2x^2 + 3y^3 - 4xy)$

3. $x^4 - x^3 - x + 1 = x^3 \cdot (x - 1) - (x - 1) = (x - 1) \cdot (x^3 - 1) = (x - 1) \cdot (x - 1) \cdot (x^2 + x + 1) =$
 $= (x - 1)^2 \cdot (x^2 + x + 1)$

4. $a^2b + ab^2 + a + b = ab \cdot (a + b) + (a + b) = (a + b) \cdot (ab + 1)$

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

6. $4a^2y^4 - 1 = (2ay^2 + 1) \cdot (2ay^2 - 1)$

7. $x^2 - (y + 5)^2 = [x + (y + 5)] \cdot [x - (y + 5)] = (x + y + 5) \cdot (x - y - 5)$

8. $4a^2 - 12ab + 9b^2 = (2a - 3b)^2$

9. $x^9 + y^9 = (x^3 + y^3) \cdot (x^6 - x^3y^3 + y^6) = (x + y) \cdot (x^2 - xy + y^2) \cdot (x^6 - x^3y^3 + y^6)$

10. $8x^3 - 36x^2 + 54x - 27 = (2x - 3)^3$

11. $4x^2 - 4xy - 12x + y^2 + 6y + 9 = (2x - y - 3)^2$

12. $x^6 - y^{12} = (x^3 + y^6) \cdot (x^3 - y^6) = (x + y^2) \cdot (x^2 - xy^2 + y^4) \cdot (x - y^2) \cdot (x^2 + xy^2 + y^4)$

13. $x^2 + 8x + 12 = (x + 2) \cdot (x + 6)$

14. $2a^2 - 7a + 5 = 2a^2 - 2a - 5a + 5 = 2a \cdot (a - 1) - 5 \cdot (a - 1) = (a - 1) \cdot (2a - 5)$