

Math 0408 – Intermediate Algebra
Factoring

Factor each of the following completely

1. $16 - x^4$

2. $8y^3 - 1$

3. $27 + r^3$

4. $18 - 2a^{2n}$

5. $16x^3y^2 - 4xy^2$

6. $1 - 8x^3$

Solutions:

1. $16 - x^4$

$$(4 + x^2)(2 - x)(2 + x)$$

3. $27 + r^3$

$$(3 + r)(9 - 3r + r^2)$$

5. $16x^3y^2 - 4xy^2$

$$4xy^2(2x - 1)(2x + 1)$$

2. $8y^3 - 1$

$$(2y - 1)(4y^2 + 2y + 1)$$

4. $18 - 2a^{2n}$

$$2(3 - a^n)(3 + a^n)$$

6. $1 - 8x^3$

$$(1 - 2x)(1 + 2x + 4x^2)$$