

## Algebra 3 Assignment # 9

**Factor the Following:**

(1)  $4x^2 - 9$

(2)  $a^2 - 121b^2$

(3)  $x^3 + 64$

(4)  $125x^3 - 64$

(5)  $8x^3 + 729y^3$

**Factor using Difference of Squares with irrational numbers:**

(6)  $3 - 4x^2$

(7)  $x - 36$

(8)  $8 - 3x$

**Factor using Sum or Difference of Cubes with irrational numbers:**

(9)  $7 + a^3$

(10)  $27x + 1$

(11)  $3x - 4$

**Factor the following completely:**

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

(13)  $-y - x + 1 + xy$

(14)  $2 - y^2 + 2x - xy^2$

(15)  $7x^3 + 7h^3$

(16)  $a^8 - b^8$

(17)  $a^5 - 32$

(18)  $a^3x - b^3y + b^3x - a^3y$

(19)  $x^5 - 16xy^4 - 2x^4y + 32y^5$

(20)  $20a^2 - 13a + 1$

(21)  $9x^2 + 6x + 1$

(22)  $14x^2 + 37x + 5$

(23)  $8x^2 - 9x + 1$

(24)  $8x^2 - 16x + 6$

## Algebra 3 Assignment # 9

### Answers:

1.  $(2x+3)(2x-3)$

2.  $(a+11b)(a-11b)$

3.  $(x+4)(x^2-4x+16)$

4.  $(5x-4)(25x^2+20x+16)$

5.  $(2x+9y)(4x^2-18xy+81y^2)$

6.  $(\sqrt{3}+2x)(\sqrt{3}-2x)$

7.  $(\sqrt{x}+6)(\sqrt{x}-6)$

8.  $(\sqrt{8}-\sqrt{3x})(\sqrt{8}+\sqrt{3x})$

9.  $(\sqrt[3]{7}+a)(\sqrt[3]{49}-a\sqrt[3]{7}+a^2)$

10.  $(3\sqrt[3]{x}+1)(9\sqrt[3]{x^2}-3\sqrt[3]{x}+1)$

11.  $(\sqrt[3]{3x}-\sqrt[3]{4})(\sqrt[3]{9x^2}+\sqrt[3]{12x}+2\sqrt[3]{2})$

12.  $(x-1)(x+y)$

13.  $(x-1)(y-1)$

14.  $(x+1)(2-y^2)$

15.  $7(x+h)(x^2-xh+h^2)$

16.  $(a-b)(a+b)(a^2+b^2)(a^4+b^4)$

17.  $(a-2)(a^4+2a^3+4a^2+8a+16)$

18.  $(x-y)(a+b)(a^2-ab+b^2)$

19.  $(x+2)(x-2)(x-2y)(x^2+4)$

20. *NS*

21.  $(3x+1)^2$

22.  $(7x+2)(2x+5)$

23.  $(8x-1)(x-1)$

24.  $2(2x-1)(2x-3)$