

Math 111/33 Background Topics – Set 2

Topic: Factoring Greatest Common Factors and Trinomials

Greatest Common Factors (GCFs)

1. Factor: $6x^3 + 15x^2$

$$3x^2(2x+5)$$

2. Factor: $4a^2b^4 - 20a^3b^3 + 8ab^3$

$$4ab^3(ab - 5a^2 + 2)$$

Trinomials

- can switch order of factors

3. Factor: $y^2 - 13y + 22$

$$(y-11)(y-2)$$

5. Factor: $x^2 + 13x + 12$

$$(x+12)(x+13)$$

4. Factor: $a^2 - 3a - 10$

$$(a-5)(a+2)$$

6. Factor: $x^2 - 2x - 15$

$$(x-5)(x+3)$$

Difference of Squares *- can switch order of factors*

again

7. Factor: $4x^2 - 25$

$$(4x+5)(4x-5)$$

9. Factor: $y^4 - 1$

$$(y^2+1)(y^2-1) \\ = (y^2+1)(y+1)(y-1)$$

8. Factor: $t^2 - 49$

$$(t-7)(t+7)$$

10. Factor: $x^2 - \frac{16}{81}$

$$(x+\frac{4}{9})(x-\frac{4}{9})$$

Mixed

11. Factor: $-3ab^2 + 36ab - 39a$

$$-3a(b^2 + 12b - 13) \\ = -3a(b+13)(b-1)$$

13. Factor: $y^3 + 6y^2 + 8y$

$$y(y^2 + 6y + 8) \\ = y(y+4)(y+2)$$

12. Factor: $2x^2 - 50$

$$2(x^2 - 25) \\ 2(x+5)(x-5)$$

14. Factor: $-2x^4 + 2x^3 + 40x^2$

$$-2x^2(x^2 - x - 20) \\ = -2x^2(x-5)(x+4)$$