

Factoring Review: Factor. If not factorable, write PRIME.

I. GCF

$$12a^3b + 15ab^3 = 3ab(4a^2 + 5b^2)$$

1. $6x + 3$
2. $24x^2 - 8x$
3. $6x - 12$
4. $2x^2 + 8x$
5. $4x + 10$
6. $10x^2 + 35x$
7. $10x^2y - 15xy^2$

II. Difference of Two Squares

$$3x^2 - 48 = 3(x^2 - 16) = 3(x+4)(x-4)$$

1. $x^2 - 1$
2. $x^2 - 9$
3. $x^2 + 4$
4. $x^2 - 25$
5. $9y^2 - 16$
6. $4x^2 - 25$
7. $9x^2 - 1$
8. $a^2 - x^2$
9. $25 - m^2$
10. $x^2 - 16y^2$
11. $25m^2 - n^2$

III. Factoring a Trinomial: $x^2 + bx + c$

$$x^2 + 7x + 10 = (x+2)(x+5)$$

1. $x^2 + 6x + 8$
2. $c^2 + 5c + 6$
3. $y^2 - 9y + 14$
4. $x^2 - 10x + 16$
5. $a^2 + 12a + 27$
6. $x^2 - 14x + 24$
7. $x^2 - 15x + 36$
8. $y^2 + 21y + 54$
9. $m^2 + 13m - 36$
10. $x^2 - 8x + 15$
11. $y^2 - 4y - 32$

IV. Factoring a trinomial: $ax^2 + bx + c$

$$2x^2 - 5x - 3 = (2x + 1)(x - 3)$$

1. $2x^2 - 5x - 3$
2. $3x^2 + 10x - 8$
3. $2y^2 + 15y + 7$
4. $7a^2 - 11a + 4$
5. $5n^2 + 17n + 6$
6. $4y^2 + 8y + 3$
7. $3x^2 + 4x - 7$
8. $2x^2 + 13x + 15$
9. $9y^2 + 6y - 8$
10. $6x^2 - 7x - 20$

V. Mixed factoring

$$5x^2 + 20x - 60 = 5(x^2 + 4x - 12) = 5(x + 6)(x - 2)$$

1. $2x^2 - 8$
2. $2x^2 + 8x + 6$
3. $3n^2 + 9n - 30$
4. $6x^2 - 26x - 20$
5. $2x^2 + 12x - 80$
6. $5t^2 + 15t + 10$
7. $8n^2 - 18$
8. $14x^2 + 7x - 21$

ANSWERS

I.	II.	III>	IV.	V.
<ol style="list-style-type: none"> 1. $3(2x + 1)$ 2. $8x(3x - 1)$ 3. $6(x - 2)$ 4. $2x(x + 4)$ 5. $2(2x + 5)$ 6. $5x(2x + 7)$ 7. $5xy(2x - 3y)$ 	<ol style="list-style-type: none"> 1. $(x + 1)(x - 1)$ 2. $(x + 3)(x - 3)$ 3. prime 4. $(x + 5)(x - 5)$ 5. $(3y + 4)(3y - 4)$ 6. $(2x + 5)(2x - 5)$ 7. $(3x + 1)(3x - 1)$ 8. $(a + x)(a - x)$ 9. $(5 + m)(5 - m)$ 10. $(x + 4y)(x - 4y)$ 11. $(5m + n)(5m - n)$ 	<ol style="list-style-type: none"> 1. $(x + 4)(x + 2)$ 2. $(c + 2)(c + 3)$ 3. $(y - 7)(y - 2)$ 4. $(x - 8)(x - 2)$ 5. $(a + 9)(a + 3)$ 6. $(x - 12)(x - 2)$ 7. $(x - 12)(x - 3)$ 8. $(y + 18)(y + 3)$ 9. prime 10. $(x - 5)(x - 3)$ 11. $(y - 8)(y + 4)$ 	<ol style="list-style-type: none"> 1. $(2x + 1)(x - 3)$ 2. $(3x - 2)(x + 4)$ 3. $(2y + 1)(y + 7)$ 4. $(7a - 4)(a - 1)$ 5. $(5n + 2)(n + 3)$ 6. $(2y + 3)(2y + 1)$ 7. $(3x + 7)(x - 1)$ 8. $(2x + 3)(x + 5)$ 9. $(3y - 2)(3y + 4)$ 10. $(3x + 4)(2x - 5)$ 	<ol style="list-style-type: none"> 1. $2(x + 2)(x - 2)$ 2. $2(x + 3)(x + 1)$ 3. $3(n + 5)(n - 2)$ 4. $2(3x + 2)(x - 5)$ 5. $2(x + 10)(x - 4)$ 6. $5(t + 1)(t + 2)$ 7. $2(2n + 3)(2n - 3)$ 8. $7(2x + 3)(x - 1)$