

1.  $x^2 - 6x$  GCF

$$x(x-6)$$

2.  $1 - a^3$  perfect cubes

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

3.  $3x^2 - 7x - 6$

$$\left(\frac{3x-9}{3}\right)(3x+2)$$

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

4.  $2x^2 - 8$  GCF

$2(x^2 - 4)$  perfect squares

$$2(x-2)(x+2)$$

5.  $(50k^2 - 10kr) + (5k - r)$  grouping

$$10k(5k-r) + 1(5k-r)$$

$$(5k-r)(10k+1)$$

6.  $7x^3 + 11y^2$

PRIME

7.  $2x^2 - 10x - 28$  GCF

$$2(x^2 - 5x - 14)$$

$$2(x-7)(x+2)$$

8.  $y^2 - 64$  perfect squares

$$(y-8)(y+8)$$

9.  $2x^3y^5 + 10x^2y^6$  GCF

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

10.  $(ax - bx) + (ay + by)$  grouping

$$x(a-b) + -y(a-b)$$

$$(a-b)(x-y)$$

11.  $x^{16} - 64$  Diff. of perfect squares

$$(x^8-8)(x^8+8)$$

12.  $x^2 + 9$

PRIME

13.  $x^2 + 13x + 36$  trinomial

$$(x+9)(x+4)$$

14.  $3x^2 - 2x$  GCF

$$x(3x-2)$$

15.  $x^2 - 21x - 22$  trinomial

$$(x-22)(x+1)$$

16.  $(7c^3 - 28c^2) + (3c - 12)$  grouping  
 $7c^2(c-4) + 3(c-4)$

$(c-4)(7c^2+3)$

17.  $12x^2 + 5x - 2$

$12 \cdot -2 = \frac{-24}{8, -3}$

$\frac{(12x+8)(12x-3)}{4 \quad 3}$

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

18.  $8x^6 + 27y^3$  perfect cubes

$(2x^2+3y)(4x^4-6x^2y+9y^2)$

19.  $3x^3 - 9xy^4$  GCF

$3x(x^2 - 3y^4)$

20.  $(8y+2yz) + (-3z^2-12z)$  grouping

$2y(4+z) - 3(z+4)$

$(z+4)(2y-3z)$

21.  $7x + 49$  GCF

$7(x+7)$

22.  $25 - x^8$  perfect squares

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

23.  $x^2 - 7x - 8$  trinomial

$(x-8)(x+1)$

24.  $4x^2 - 36$  GCF

$4(x^2-9)$  Diff. of Perfect Squares

$4(x-3)(x+3)$

25.  $64y^3 + 1$  perfect cubes

$(4y+1)(16y^2-4y+1)$

26.  $3x^2 - 3x - 90$  GCF

$3(x^2 - x - 30)$  trinomial

$3(x-6)(x+5)$

27.  $5x^2 - 125$  GCF

$5(x^2-25)$  perfect squares

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