

1.  $x^2 + 4x - 32$

$mxn = -32$   
 $m+n = 4$   
8, -4

$(x+8)(x-4)$

3.  $4x^2 - 25$

$(2x+5)(2x-5)$

5.  $16x^4 - 625$

$(4x^2+25)(4x^2-25)$

$(4x^2+25)(2x+5)(2x-5)$

7.  $x^2 - 8x + 16$

$(x-4)^2$

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

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

11.  $x^2 - 10x + 11$

$(x-11)(x+1)$

13.  $2ax^2 - 12ax + 9a$

$a(2x^2 - 12x + 9)$

$mxn = 18$   
 $m+n = -12$

$a(2x^2 - 12x + 9)$

15.  $x^4 - 20x^3 + 96x^2$

$x^2(x^2 - 20x + 96)$

$x^2(x-12)(x-8)$

17.  $y^2 + \frac{2}{3}y + \frac{1}{9}$

$(y + \frac{1}{3})^2$

19.  $5 - 20t^2$

$5(1 - 4t^2)$

$5(1+2t)(1-2t)$

2.  $x^2 - 7x + 10$

$(x-5)(x-2)$

4.  $6x^2 - 10x$

$2x(3x-5)$

6.  $x^2 + 4x - 285$

$(x+19)(x-15)$

8.  $6x^2y - 9xy^2 - 4x + 6y$

$3xy(2x-3y) - 2(2x-3y)$

$(2x-3y)(3xy-2)$

10.  $16x^3 + 40x^2 + 10x + 25$

$8x^2(2x+5) + 5(2x+5)$

$(2x+5)(8x^2+5)$

12.  $x^3 - 4x^2 + 5x - 20$

$x^2(x-4) + 5(x-4)$

$(x-4)(x^2+5)$

14.  $64x^3 - 36x$

$4x(16x^2 - 9)$

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

16.  $y^2 - 3y - 28$

$(y-7)(y+4)$

18.  $x^2 + 3xy - 10y^2$

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

20.  $x^2 - 6.25$

$(x+2.5)(x-2.5)$