

Period

Name

Date

7.5

### Factoring $x^2 + bx + c$

1)  $x^2 + 11x + 30$

30  
1-30  
2-15  
3-10  
5-6

$(x + 5)(x + 6)$

2)  $x^2 + 6x + 9$

9-1  
3-3

$(x + 3)(x + 3)$

3)  $x^2 + 7x + 10$

10-1  
2-5

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

4)  $n^2 + 9n + 14$

1-14  
2-7

$(n + 7)(n + 2)$

5)  $w^2 + 13w + 36 = (w + 4)(w + \boxed{9})$   $\frac{36}{4} = 9$

6)  $y^2 + 18y + 65 = (y + 13)(y + \boxed{5})$   $\frac{65}{13} = 5$

7)  $x^2 - 12x + 32 = (x - 8)(x - \boxed{4})$   $\frac{32}{8} = 4$

8)  $q^2 - 14q + 45 = (q - 9)(q - \boxed{5})$   $\frac{45}{9} = 5$

9)  $v^2 - 17v + 60 = (v - 12)(v - \boxed{5})$   $\frac{60}{12} = 5$

10)  $q^2 - 13q + 42 = (q - 6)(q - \boxed{7})$   $\frac{42}{6} = 7$

11)  $d^2 - 9d + 8 = (d - 8)(d - \boxed{1})$   $\frac{8}{8} = 1$

12)  $t^2 - 9t + 20 = (t - 5)(t - \boxed{4})$   $\frac{20}{5} = 4$

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13)  $t^2 + 3t - 10$

$(t + 5)(t - 2)$  1.10  
2.5

14)  $w^2 + 2w - 8$  1.8

$(w + 4)(w - 2)$  2.4

15)  $x^2 + 3x - 40$

$(x + 8)(x - 5)$  1.40  
2.20  
4.10  
5.8

16)  $d^2 - 4d - 12$

$(d + 2)(d - 6)$  1.12  
2.6  
3.4

17)  $p^2 - 7p - 8$

$(p + 1)(p - 8)$  1.8  
2.4

18)  $x^2 + 5x - 6$

$(x + 6)(x - 1)$  1.6  
2.3

19)  $m^2 - 6m - 27$

$(m + 3)(m - 9)$  1.27  
3.9

20)  $t^2 - t - 20$

$(t + 4)(t - 5)$  1.20  
2.10  
4.5

$$21) V^2 - 4V - 12$$

$$(V+2)(V-6) \quad \begin{array}{l} 1 \cdot 12 \\ 2 \cdot 6 \\ 3 \cdot 4 \end{array}$$

$$22) C^2 - 7C - 44$$

$$(C+4)(C-11) \quad \begin{array}{l} 44 \cdot 1 \\ 2 \cdot 22 \\ 4 \cdot 11 \end{array}$$

$$23) t^2 + 6t - 16$$

$$(t+8)(t-2) \quad \begin{array}{l} 1 \cdot 16 \\ 2 \cdot 8 \\ 4 \cdot 4 \end{array}$$

$$24) f^2 + f - 6$$

$$(f+3)(f-2) \quad \begin{array}{l} 1 \cdot 6 \\ 2 \cdot 3 \end{array}$$

$$25) x^2 - 6x - 55$$

$$(x+5)(x-11) \quad \begin{array}{l} 1 \cdot 55 \\ 5 \cdot 11 \end{array}$$

$$26) y^2 + 3y - 54$$

$$(y+9)(y-6) \quad \begin{array}{l} 1 \cdot 54 \\ 2 \cdot 27 \\ 3 \cdot 18 \\ 4 \cdot \phantom{18} \\ 5 \cdot \phantom{18} \\ 6 \cdot 9 \end{array}$$

$$27) n^2 - 10n - 11$$

$$(n+1)(n-11) \quad 1 \cdot 11$$

$$28) x^2 - 4x - 12$$

$$(x+2)(x-6) \quad \begin{array}{l} 1 \cdot 12 \\ 2 \cdot 6 \\ 3 \cdot 4 \end{array}$$

$$29) x^2 + x - 56$$

$$(x+8)(x-7) \quad \begin{array}{l} 1 \cdot 56 \\ 7 \cdot 8 \end{array}$$

$$30) x^2 - 3x - 18$$

$$(x+3)(x-6) \quad \begin{array}{l} 1 \cdot 18 \\ 2 \cdot 9 \\ 3 \cdot 6 \end{array}$$

$$31) y^2 + 3y - 4$$

$$(y+4)(y-1) \quad \begin{array}{l} 1 \cdot 4 \\ 2 \cdot 2 \end{array}$$