

# Answer Key

Name \_\_\_\_\_

Period \_\_\_\_\_

## Factoring Polynomials (ANSWERS)

1.  $(x - 2)(x - 7)$   $x^2 - 9x + 14$

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

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

10.  $(x - 4)(x - 4)$   $x^2 - 8x + 16$

3.  $(x + 4)(x + 5)$   $x^2 + 9x + 20$

11.  $(2x - 1)(2x + 1)$   $4x^2 - 1$

4.  $(x - 6)(x - 2)$   $x^2 - 8x + 12$

12.  $(3x - 1)(3x - 1)$   $9x^2 - 6x + 1$

5.  $(3x + 1)(x + 3)$   $3x^2 + 10x + 3$

13.  $(x + 7)(x - 2)$   $x^2 + 5x - 14$

6.  $(x - 5)(x - 2)$   $x^2 - 7x + 10$

14.  $(x + 2)(2x + 2)$   $2x^2 + 6x + 4$

7.  $(x - 4)(x + 6)$   $x^2 + 2x - 24$

15.  $(x - 7)(x - 7)$   $x^2 - 14x + 49$

8.  $(4x - 1)(x + 1)$   $4x^2 + 3x - 1$

16.  $(2x + 3)(x - 4)$   $2x^2 - 5x - 12$

(17)  $3x^2 - 15x + 18$   
 $3(x^2 - 5x + 6)$   
 $3(x-2)(x-3)$

(18)  $2x^2 + 8x - 24$   
 $2(x^2 + 4x - 12)$   
 $2(x+6)(x-2)$

(19)  $2x^2 + 16x - 32$   
 $2(x^2 + 8x - 16)$

(20)  $-45n^2 - 9$   
 $-9(5n^2 + 1)$   
 or  
 $9(-5n^2 - 1)$

(21)  $-30b^5 + 48b^2 + 6b$   
 $6b(-5b^4 + 8b + 1)$

(22)  $k^2 - 9$   
 $(k+3)(k-3)$

(23)  $9a^2 - 4$   
 $(3a+2)(3a-2)$

(24)  $2k^2 - 11k + 15$   
 $k^2 - 11k + 30$   
 $(k - \frac{5}{2})(k - \frac{6}{2})$   
 $(2k-5)(k-3)$

(25)  $3n^2 - 5n + 2$   
 $n^2 - 5n + 6$   
 $(n - \frac{2}{3})(n - \frac{3}{3})$   
 $(3n-2)(n-1)$

(26)  $4x^2 + 5x + 1$   
 $x^2 + 5x + 4$   
 $(x + \frac{4}{4})(x + \frac{1}{4})$   
 $(x+1)(4x+1)$

(27)  $12r^2 + 80r - 28$   
 $4(3r^2 + 20r - 7)$   
 $4(r^2 + 20r - 21)$

(28)  $9p^2 + 87p + 54$   
 $3(3p^2 + 29p + 18)$   
 $3(p^2 + 29p + 54)$   
 $3(p + \frac{27}{3})(p + \frac{2}{3})$   
 ~~$3(p+9)(p+\frac{2}{3})$~~   
 $3(p+9)(3p+2)$

$4(r + \frac{21}{3})(r - \frac{1}{3})$   
 $4(r+7)(3r-1)$