

Student Name: \_\_\_\_\_

Score: \_\_\_\_\_

**Factorize the Trinomials**

Problems

Work Space

①  $2x^2 - 3x - 5$

Answer:  $(2x-5)(x+1)$

$2x^2 - 3x - 5$   
 $x^2 - 3x - 10$   $\begin{matrix} -10 \\ -5 \\ -3 \end{matrix}$   
 $(x - \frac{5}{2})(x + \frac{2}{2})$   
 $(2x-5)(x+1)$

②  $5x^2 - 14x - 3$

Answer:  $(x-3)(5x+1)$

$5x^2 - 14x - 3$   
 $x^2 - 14x - 15$   $\begin{matrix} -15 \\ -15 \\ -14 \end{matrix}$   
 $(x-15)(x+1)$   
 $(x-3)(5x+1)$

③  $3x^2 - 7x + 2$

Answer:  $(x-2)(3x-1)$

$3x^2 - 7x + 2$   
 $x^2 - 7x + 6$   $\begin{matrix} -6 \\ -6 \\ -7 \end{matrix}$   
 $(x-\frac{6}{3})(x-\frac{1}{3})$   
 $(x-2)(3x-1)$

④  $4x^2 + 4x - 3$

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

$4x^2 + 4x - 3$   
 $x^2 + 4x - 12$   $\begin{matrix} -12 \\ 6 \\ -2 \\ 4 \end{matrix}$   
 $(x+6)(x-2)$   
 $(x+\frac{3}{2})(x-\frac{1}{2}) \Rightarrow (2x+3)(2x-1)$

⑤  $15x^2 - 14x - 8$

Answer:  $(3x-4)(5x+2)$

$15x^2 - 14x - 8$   
 $x^2 - 14x - 120$   $\begin{matrix} -120 \\ -20 \\ 6 \\ -14 \end{matrix}$   
 $(x-\frac{20}{15})(x+\frac{6}{15})$   
 $(x-\frac{4}{3})(x+\frac{2}{5})$   
 $(3x-4)(5x+2)$

	120
1	120
2	60
3	40
4	30
5	24
6	20

Factoring Trinomials ( $a > 1$ )

Factor each completely.

1)  $3p^2 - 2p - 5$

$p^2 - 2p - 15$

$(p - \frac{5}{3})(p + \frac{3}{3})$

~~$\frac{-15}{-2}$   
 $\frac{-5}{3}$~~

$(3p - 5)(p + 1)$

2)  $2n^2 + 3n - 9$

$n^2 + 3n - 18$

$(n + \frac{6}{2})(n - \frac{3}{2})$

~~$\frac{-18}{3}$   
 $\frac{6}{-3}$~~

$(n + 3)(2n - 3)$

3)  $3n^2 - 8n + 4$

$n^2 - 8n + 12$

$(n - \frac{6}{3})(n - \frac{2}{3})$

~~$\frac{12}{-8}$   
 $\frac{-6}{-2}$~~

$(n - 2)(3n - 2)$

4)  $5n^2 + 19n + 12$

$n^2 + 19n + 60$

$(n + \frac{4}{5})(n + \frac{15}{5})$

~~$\frac{60}{1.9}$   
 $\frac{4}{15}$~~

$(5n + 4)(n + 3)$

5)  $2v^2 + 11v + 5$

$v^2 + 11v + 10$

$(v + \frac{10}{2})(v + \frac{1}{2})$

~~$\frac{10}{11}$   
 $\frac{10}{1}$~~

$(v + 5)(2v + 1)$

6)  $2n^2 + 5n + 2$

$n^2 + 5n + 4$

$(n + \frac{4}{2})(n + \frac{1}{2})$

~~$\frac{4}{5}$   
 $\frac{4}{1}$~~

$(n + 2)(2n + 1)$

7)  $7a^2 + 53a + 28$

$a^2 + 53a + 196$

$(a + \frac{4}{7})(a + \frac{49}{7})$

~~$\frac{196}{53}$   
 $\frac{4}{49}$~~

$(7a + 4)(a + 7)$

8)  $9k^2 + 66k + 21$

$3(3k^2 + 22k + 7)$

$k^2 + 66k + 189$

$(k + \frac{3}{9})(k + \frac{63}{9})$

~~$\frac{189}{66}$   
 $\frac{3}{63}$~~

$(k + \frac{1}{3})(k + 7)$

$(3k + 1)(k + 7)$