

First Name: _____

Last Name: _____

17 - EQ - 5.3 factoring Trinomials (a>1)

Q1: Which of the following represents the factored form of $x^2 - x - 30$?

- a. $(x + 5)(x + 6)$
- b. $(x + 5)(x - 6)$
- c. $(x - 5)(x + 6)$
- d. $(x - 5)(x - 5)$

$+5 \quad -6$
 $\square + \square = -1$
 $\square \times \square = -30$
 $(x + 5)(x - 6)$

$1, 30$
 $2, 15$
 $3, 10$
 $5, 6$

Q2: Which of the following represents the factored form of $2x^2 - 7x - 15$?

- a. $(x + 5)(2x - 3)$
- b. $(x - 5)(2x + 3)$
- c. $(2x + 5)(x - 3)$
- d. $(2x - 5)(x + 3)$

-30
 $+3 \quad -10$
 $\square + \square = -7$
 $\square \times \square = -30$
 $2x^2 + 3x - 10x - 15$
 $(2x^2 + 3x) + (-10x - 15)$
 $x(2x + 3) - 5(2x + 3)$
 $(2x + 3)(x - 5)$

$1, 30$
 $2, 15$
 $3, 10$
 $5, 6$

Q3: The expression $3x^2 + 11x - 4$ can be factored into the form $(ax + b)(cx - d)$, where $a, b, c,$ and d are ____, ____, ____, and ____.

(Record your **four digit** answer in the Numerical Response boxes below)

| | | | |
|---|---|---|---|
| 1 | 4 | 3 | 1 |
|---|---|---|---|

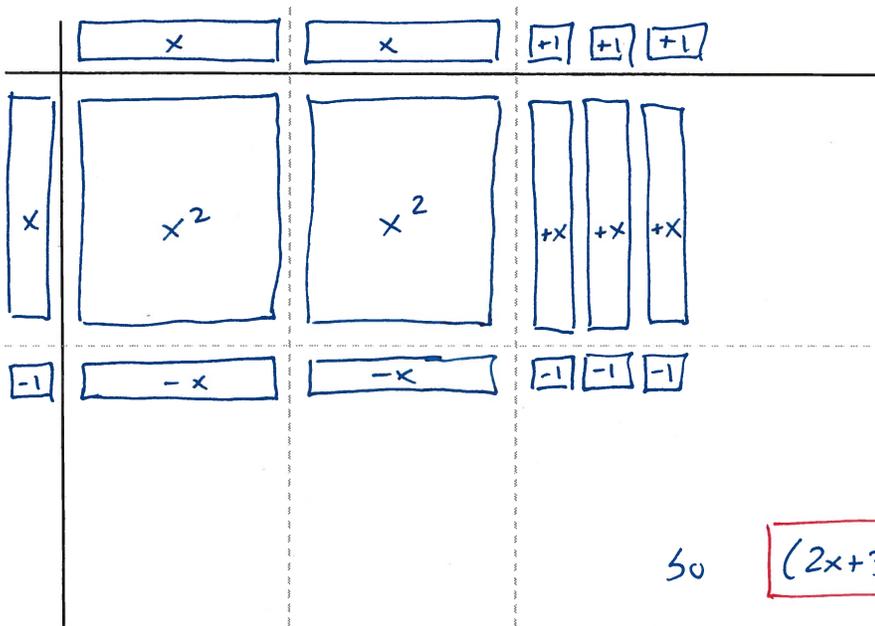
$-1 \quad +12$
 $\square + \square = 11$
 $\square \times \square = -12$
 $3x^2 - 1x + 12x - 4$
 $(3x^2 - 1x) + (12x - 4)$
 $x(3x - 1) + 4(3x - 1)$
 $(3x - 1)(x + 4)$ or $(x + 4)(3x - 1)$
 $(1x + 4)(3x - 1)$
 $(ax + b)(cx - d)$
 $a = 1 \quad c = 3$
 $b = 4 \quad d = 1$

$1, 12$
 $2, 6$
 $3, 4$

Q4: (Long Answer) Fully factor the expression $12x^3y - 22x^2y + 6xy$ (2 marks)

$$\begin{aligned}
 & 2xy [6x^2 - 11x + 3] && \begin{matrix} -2 & -9 \\ \square + \square = -11 \\ \square \times \square = 18 \end{matrix} && \begin{matrix} 1, 18 \\ \boxed{2, 9} \\ 3, 6 \end{matrix} \\
 & 2xy [6x^2 - 2x - 9x + 3] \\
 & 2xy [(6x^2 - 2x) + (-9x + 3)] \\
 & 2xy [2x(3x - 1) - 3(3x - 1)] \\
 & 2xy (3x - 1)(2x - 3)
 \end{aligned}$$

Q5: (Long Answer) Using an Algebra Tile diagram, factor $2x^2 + x - 3$ (1 marks)



MARKING

| | |
|-------------|-----------|
| Beginning | 0.0 – 2.5 |
| Progressing | 3.0 – 4.0 |
| Competent | 4.5 – 5.5 |
| Exemplary | 6.0 |