FMP10 PreTest Unit 3B Name_____

Factor each expression:

1. $8m^3 - 4m^2$

$4m^2(2m-1)$

2. $30x^2y - 20x^2y^2 + 10x^3y^2$

$10x^2y(3-2y+xy)$

3. $2ax - ay + 4bx - 2by$

$a(2x-y) + 2b(2x-y)$

$(2x-y)(a+2b)$

4. $6x^2 + 2xy - 15x - 5y$

$2x(3x+y) - 5(3x+y)$

$(3x+y)(2x-5)$

5. $2x^2 + 7x + 5$

$2x^2+2x+5x+5$

$2x(x+1)+5(x+1)$

$(x+1)(2x+5)$

$\times$ 10
$+$ 7
2, 5

6. $6x^2 - 11xy + 3y^2$

$6x^2-2xy-9xy+3y^2$

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

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

$\times$ 18
$+$ -11
-2, -9

7. $a^2 + 5a - 14$

$(a+7)(a-2)$

$\times$ -14
$+$ 5
7, -2

8. $p^2 - 5pq - 24q^2$

$(p-8q)(p+3q)$

$\times$ -24
$+$ -5
-8, 3

Completely factor each expression:

9. $12a^3 - 94a^2 - 16a$

$2a(6a^2 - 47a - 8)$

$6a^2 - 48a + a - 8$

$6a(a-8) + 1(a-8)$

$2a(a-8)(6a+1)$

(×) -48

(+) -47

$-48, 1$

11. $6m^2n - 12mn^2 - 10mn + 20n^2$

$2n(3m^2 - 6mn - 5m + 10n)$

$3m(m-2n) - 5(m-2n)$

$2n(m-2n)(3m-5)$

10. $7c^2d - 35cd^2 + 42d^3$

$7d(c^2 - 5cd + 6d^2)$

$7d(c-2d)(c-3d)$

(×) 6

(+) -5

$-2, -3$

Determine **ALL** integral values of k so that each trinomial can be factored:

12. $x^2 + kx - 9$

(×) -9 | (+) k

$-1 \quad 9 \rightarrow 8$

$1 \quad -9 \rightarrow -8$

$-3 \quad 3 \rightarrow 0$

$k = 0, \pm 8$

13. $3x^2 + kx + 7$

(×) 21 | $+k$

$1 \quad 21 \rightarrow 22$

$-1 \quad -21 \rightarrow -22$

$3 \quad 7 \rightarrow 10$

$-3 \quad -7 \rightarrow -10$

$k = \pm 10, \pm 22$

Determine **TWO** integral values of k so that each trinomial can be factored:

14. $x^2 - 3x + k$

(×) k | (+) -3

$2 \quad \leftarrow -1 \quad -2$

$-4 \quad \leftarrow -4 \quad +1$

$-10 \quad \leftarrow -5 \quad +2$

$k = 2, -4, -10 \ldots$

15. $3x^2 + 4x + k$

(×) $3k$ | (+) 4

$3 \quad \leftarrow 1 \quad 3$

$-12 \quad \leftarrow 6 \quad -2$

$-45 \quad \leftarrow 9 \quad -5$

$3k = 3 \quad 3k = -12 \quad 3k = -45$

$k = 1 \quad k = -4 \quad k = -9$