* Factor each of the following:

(A) $x^2 + 8x + 12 = (x+2)(x+6)$

$(2)(6) = 12$

$2 + 6 = 8$

Add

1 · 12

2 · 6 → 8

3 · 4

(B) $x^2 - 8x + 12 = (x-2)(x-6)$

$(-2)(-6) = 12$

$-2 + -6 = -8$

$x^2 - 6x - 2x + 12$

$x^2 - 8x + 12$

(C) $x^2 + 7x + 12 = (x+3)(x+4)$

$(3)(4) = 12$

$3 + 4 = 7$

Add

1 · 12

2 · 6

3 · 4 → 7

(D) $x^2 - 7x + 12 = (x-3)(x-4)$

$(-3)(-4) = 12$

$-3 + -4 = -7$

(E) $x^2 + 1x - 12 = (x-3)(x+4)$

$(-3)(4) = -12$

$-3 + 4 = 1$

Not Same

+1 −12 −1 +12

+2 −6 −2 +6

+3 −4 −3 +4

(F) $x^2 - 1x - 12 = (x+3)(x-4)$

$(3)(-4) = -12$

$3 + -4 = -1$

(G) $x^2 + 7x - 12$

$(3)(-4) = -12$ -12

$3 + -4 = +7$

Not Factorable

Prime

1 · 12

2 · 6

3 · 4