ADD MULT

DRILL (Factor)

1, 22
2, 11

① $x^2 + 5x + 4 = (x+4)(x+1)$

② $x^2 + 9x - 22 = (x+11)(x-2)$

③ $x^2 - 2x - 24 = (x+4)(x-6)$

~~1 24~~
~~2 12~~
~~3 8~~
4 6

ax^2+bx+c Factor Trinomials ($a > 1$)

Ex: $(2x+3)(x+4) = 2x^2 + 8x + 3x + 12$

$= \boxed{2x^2 + 11x + 12}$ *

$2(12) = 24$

$x^2 + 11x + 24$

Steps:

1. Multiply "ac"
2. Rewrite the trinomial as $x^2 + bx + ac$
3. Factor the trinomial
4. Divide the #'s by "a" and simplify any fraction. (If you have a denominator it goes in front of x)

$ax^2 + bx + c$ → ⊛ $2x^2 + 11x + 12$

✓ Step 1: Multiply ac ✓ $2(12) = 24$

✓ Step 2: Rewrite $x^2 + bx + ac$ ✓ $x^2 + 11x + 24$

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✓ Step 3: Factor ✓ $(x + 8)(x + 3)$

✓ Step 4: Divide #'s by a ✓ and simplify fractions. $a = 2$

$(x + \frac{8}{2})(x + \frac{3}{2})$

$(x + 4)(2x + 3)$

(If we have denominators they go next to "x")

FACTOR:

$a=3$

1. $3x^2 + 17x + 10$ ✱ $ac = 30$

2. $x^2 + 17x + 30$ ✓ MULT

ADD →

3. $(x+2)(x+15)$ ✓ Factor

4. $\left(x+\frac{2}{3}\right)\left(x+\frac{15}{3}\right)$ ✓ Divide #'s by a

$\boxed{(3x+2)(x+5)}$ ✱ ✓

$12x^2 + 31x + 20$

$AC = 240$

$x^2 + 31x + 240$

Factor

$24(10)$

$15(16)$

$(x + 15)(x + 16)$

$\left(x + \frac{15}{12}\right)\left(x + \frac{16}{12}\right)$

$\left(x + \frac{5}{4}\right)\left(x + \frac{4}{3}\right)$

$(4x + 5)(3x + 4)$