

** * What-When? ** *

3.8 * Factoring Summary *

Warmup * 1. Open the Factoring Assessment and just look at page 1 since the answers are on page 2. First, identify which factoring pattern you would use for each question. Second, factor each question. Remember, no peeking at page 2 until you are ready to self-assess.

2. Copy out Remarks, below.

Remark: To organize your factoring process aka factor patterns, count \times

If you see 2 terms, \rightarrow common factor first
 $\rightarrow a^2 - b^2$ pattern second

If you see 3 terms, \rightarrow common factor first
 \rightarrow sum and product factoring second ($a=1$)
or
tricky trinomial factoring second ($a \neq 1$)

If you see 4 terms, \rightarrow common factor first
 \rightarrow group factoring second.

Ex₁ Factor Fully.

a) $36a^2 - 49b^2$

Soln $= (6a - 7b)(6a + 7b)$
✓✓

b) $10n^2 - 3n - 4$

Soln $= (5n - 4)(2n + 1)$
✓✓

c) $x^2 - 4x - 5$

Soln $= (x - 5)(x + 1)$
✓✓

d) $12ax + 15a + 4x + 5$

Soln $= 3a(4x + 5) + 1(4x + 5)$
 $= (4x + 5)(3a + 1)$
✓✓

e) $4m^2 - 6m$

Soln $= 2m(2m - 3)$
✓✓

f) $2x^2 + 11x + 15$

Soln $= (2x + 5)(x + 3)$
✓✓

e₂

Ex2 Factor Fully.

a) $x^4 - 13x^2 + 36$

$= (x^2 - 9)(x^2 - 4)$, sum + product pattern

$= (x+3)(x-3)(x+2)(x-2)$, $a^2 - b^2$ difference of squares pattern second.

b) $2x^2 - 30x - 32$

$= 2(x^2 - 15x - 16)$, common factor 1st

$= 2(x - 16)(x + 1)$, sum + product pattern 2nd.

p171 [1] #1 every other letter

#2 a) → b)

#3 a) → g)

p171 [2] # (1,2) every other letter

#3.