#9 Factoring special products

- $9k^2 - 4$
- $25m^4 - 1$
- $16a^4 - 1$
- $18a^2 - 50b^2$
- $x^4 - y^4$
- $x^2 - 121y^6$
- $k^2 - 4k + 4$
- $x^2 + 2x + 1$
- $x^2 - 6x + 9$
- $x^2 + 8xy + 16y^2$
- $18m^2 - 24mn + 8n^2$

#10 Complete the square and write the square you completed

$x^2 - 34x + \_\_\_\_ = (\quad)^2$

$m^2 + 9m + \_\_\_\_ = (\quad)^2$

#3. Evaluate for $x = -1$:

- $(15-x)^2(2+x)(x)^5$
- $\dfrac{(x+2)(x-1)}{(x-3)(1-x)}$
- $6x^4 + 2x^2 + 2$

#4 · Not on review sheet but easy! Simplify:

- $(8x^2+1) - (6 - x^2 - x^4)$
- $(n - 5n^4 + 7) + (n^2 - 7n^4 - n)$

#5 Find the product (foil, basically):

- $(4x+8)(4x-8)$
- $(2+5x)^2$
- $(6x-2y)(6x+2y)$
- $(x+\sqrt{3})(x-\sqrt{3})$
- $(x-1)^2$

#6 GCF factoring:

- $7ab - 35a^2b$
- $-5x^2 - 5x^5 - 15x^4$
- $3p + 12q - 15q^2r^2$
- $30y^4z^3x^5 + 50y^4x^3z^2 - 10yzx$

#7. Factor by grouping

- $3n^3 - 2n^2 - 9n + 6$
- $7xy - 49x + 5y - 35$
- $14w^3 + 10w^2 - 7w - 5$

#8 Trinomial factoring $a=1$ and $a \neq 1$

- $x^2 + 3x + 70$
- $x^2 + 13x + 40$
- $x^2 + xy - 12y^2$
- $x^2 + 14xy + 45y^2$
- $7x^2 + 15x + 2$
- $3x^2 - 17x + 20$
- $4x^2 + 13xy + 3y^2$
- $6p^2 + 11p - 7$
- $2x^2 - x - 3$

Math 106 Exam 3 practice

#1. Cross out anything that is not a polynomial:

- $x^3 - 2x^2 + x + 1$
- $3x^{2/3} + x^{1/3} - 1$
- $\frac{x^4}{7} + \frac{x}{5}$
- $\frac{2}{x} - \frac{x}{2}$
- $6 - \sqrt{x}$
- $\frac{a_1x^2 + b_1x + c_1}{a_2x^2 + b_2x + c_2}$
- -18
- $(x-1)(x+1)(x-3)(x+2)$

#2 Identify coeffs + degree:

- $7x^4 - 2x^3 + 5x^2 - \frac{x}{3} + 1$

  $n =$ (degree)

  $a_n = a_4 =$

  $a_3 =$

  $a_2 =$

  $a_1 =$

  $a_0 =$

- $9 - 4x + 11x^3 - 16x^5$

  $n =$

  $a_n = a_? =$

  $a_5 =$

  $a_4 =$

  $a_3 =$

  $a_2 =$

  $a_1 =$

  $a_0 =$

- $\frac{x}{4}$ $n =$

  $a_n =$