

Review for Unit 4: Polynomials Exam

Logistics of the Exam – The exam will be 20 questions. There will be two sections: Section A will include 10 multiple choice questions worth 40 points. Section B will include 10 free response questions worth 60 points. The multiple-choice questions will have 4 to 5 answer choices. The free response questions will be a mix of error analysis, modelling, and short answer. You will have 80 minutes to complete the entire exam and you may **not** have more time.

Resources and Tools Allowed on the Exam – pencil, highlighter, Unit 4 formulas (given in the box below) and a graphic display calculator.

Axis of Symmetry for Quadratic Functions	Solutions of a Quadratic Equation
$f(x) = ax^2 + bx + c \Rightarrow x = \frac{-b}{2a}$	$ax^2 + bx + c = 0 \Rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Content of the Exam – Students will be expected to:

- Quadratics**
 - 4.1 • Consider a quadratic model and what the characteristics of that quadratic represents in context. [MC]
 - 4.1 • Find the quadratic regression for a set of data points. [FR]
 - 4.2 • Convert between the forms of a quadratic function. [MC]
 - 4.3 • Simplify radicals with negative radicands. [FR]
 - 4.3 • Evaluate and simplify expressions involving powers of i. [FR]
 - 4.4 • Add or subtract complex numbers. [MC]
 - 4.4 • Multiply complex numbers. [MC] *Don't forget $i^2 = -1$*
 - 4.5 • Factor a sum of squares (SOS). [MC]
 - 4.5 • Factor a quadratic perfect square trinomial (PST). [FR] } *Graphic Organizer (GO)*
 - 4.6 • Solve a system with a quadratic function and linear function. [MC]
 - 4.7 • Solve a quadratic inequality. [FR]. *(one variable Ex. 3 & 4 on Notes)*
- Polynomials**
 - 4.8 • Factor a sum/difference of cubes (DOC, SOC). [FR] } *GO*
 - 4.8 • Factor by grouping. [FR]
 - 4.8 • Factor a polynomial that is in quadratic form (QF). [MC]
 - 4.9 • State the roots/zeros of a polynomial (and their multiplicity) given the factored form of the polynomial. [MC]
 - 4.10 • Divide two polynomials. [FR] } *(Ex. 5 & 6 from Notes)*
 - 4.10 • Write a function in standard form given the zeros and leading coefficient. [FR]. *(Ex. 7 & 8 from notes)*
 - 4.11 • Determine the characteristics of a polynomial given the graph of the function including up to: end behavior, x-intercept(s), y-intercept, domain and range, possible degree. [FR]

From Previous Units

- Unit 3 • Simplify an expression involving rational exponents. [FR] *(3.1 or 3.2?)*
- Unit 2 • Solve a logarithmic equation. [MC] *(2.5)*
- Unit 1 • Construct a confidence interval given a sample mean and margin of error. [MC] *(1.9)*

The following pages include practice problems to help you with studying for the skills on the exam. **It is not inclusive of everything** so please double check the list and look at notes and homeworks. Also, there will be a Unit 4 Review DeltaMath Practice assignment available for you to review as well.

change mode

go down to REAL
then \blacktriangleright to atbi
Press enter

i : $\boxed{2ND}$ $\overset{i}{\boxed{\cdot}}$

Solve polynomial equations

Press \boxed{apps}

Find PlySmlt2 select it
1: Polynomial Root Finder

ORDER (degree)

change to atbi

Press \boxed{graph} (next)

enter the coefficients

Press \boxed{graph} (solve)

Study Tips

- Do a little math everyday. (20-35 min)
↳ @ a time you are alert.
- Write down processes or make your own graphic organizers.
- Practice (doing HW, redo notes problem on a separate sheet) check answers!
- form study groups (effective)
- consider your environment.
- read/do the study guide.