Unit 3: Modeling with Exponential and Trigonometric Functions

Our Learning Goals:

We will…
- ✓ define the growth factor or decay factor of a situation.
- ✓ convert increasing percentages to growth factors and decreasing percentages to decay factors.
- ✓ identify exponential graphs as either growth or decay factors.
- ✓ identify the meaning of parts of $f(x) = ab^x$ given a financial or scientific situation.
- ✓ solve for the unknown side of a right triangle using trigonometric functions.

Sample Problem:

Roger has invested \$4,200 at 7.2%. The function $f(x) = 4,200(1.072)^x$ represents the growth of his investment. How much money will he have after 4 years?

Why do we study this?

- ❖ As consumers, students need to be able to read graphs that businesses and banking institutions use to advertise their product or services in order to be informed and not be misled by their display of data.
- ❖ As employees, students will be expected to interpret graphs that communicate financial data to clients, colleagues, and supervisors.
- ❖ Students need to be able to identify whether their investments are growing or declining.
- ❖ Some professions, land surveyors, use trigonometric functions to calculate measurements.
- ❖ Students should know how to set up trigonometric functions for math courses after high school.

How we will show what we have learned…

Formative Assessments	Summative Assessments
Ongoing formative assessments during lesson & homework activities will help in monitoring learning and providing feedback for students.	Summative assessments to measure learning at the end of concepts will include the following: • Test: Identifying Growth and Decay Factors • Test: Interpreting Growth and Decay Factor Graphs • Test: Trigonometric Functions • Unit 3 Assessment (District-wide)

Additional Support:

- Check teacher web pages and Canvas for notes, worksheets, assignments, etc.

- Search the specific topic on the web. We recommend Khan Academy.

- Attend tutorials – you can see ANY math teacher for help.

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Curriculum and Instruction

If you have questions please contact your Math Models teacher.

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