Exponential and Logarithmic Functions – Scoring Sheet

Student Name: _____

Place a score (1-4) in each row corresponding to the student's college readiness level.

Exceeding College Ready (4): Substantially exceeds the performance expectations
College Ready (3): Shows proficiency in all of the performance expectations
Approaching College Ready (2): Meets only some of the performance expectations
Initiating College Ready (1): Does not yet meet the performance expectations

KEY COGNITIVE SKILLS	Student's Self-Assessment	Instructor's Score
Intellectual Curiosity (engages in scholarly inquiry and dialogue; accepts constructive criticism and revises personal views when valid evidence warrants)		
Reasoning (consider arguments and conclusions of self and others; constructs well-reasoned arguments to explain phenomena, validate conjectures, or support positions; supports or modifies claims based on the results of an inquiry)		
Academic Behaviors (self-monitors learning needs and seeks assistance when needed; strives for accuracy and precision; perseveres to complete and master tasks)		
Work Habits (works independently; works collaboratively)		
FOUNDATIONAL SKILLS	**Student's Self-Assessment**	**Instructor's Score**
Writing Across the Curriculum (writes clearly and coherently using standard writing conventions)		
Research Across the Curriculum (presents final products)		
MATHEMATICS STANDARDS	**Student's Self-Assessment**	**Instructor's Score**
Numeric Reasoning (performs computations with real and complex numbers)		
Algebraic Reasoning (recognizes and uses algebraic properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions)		
Functions (understands and analyzes the features of a function; develops a function to model a situation)		
Problem Solving and Reasoning (analyzes given information; uses a function to model a real world situation)		
Communication and Representation (uses mathematical language to represent, communicate the mathematical concepts in a problem; explains, displays, justifies mathematical ideas and arguments using precise mathematical language in written or oral communication)		
Connections (understands and uses appropriate mathematical models in the natural, physical, and social sciences)		

See reverse for comments.

Score	College Readiness Level
42-48	Exceeding College Ready
35-41	College Ready
18-34	Approaching College Ready
0-17	Initiating College Ready

Total Score: _____ _____

Grade: _____

See Scoring Guide for grade conversion chart.

C R A f T
College Readiness Assignments for Texas

Texas College and Career Readiness Initiatives

Exponential and Logarithmic Functions – Scoring Guide

Note: The letters and numbers of the skills below refer to their designation in the College and Career Readiness Standards.

KEY COGNITIVE SKILLS

A. Intellectual Curiosity

1. Engage in scholarly inquiry and dialogue.

College Ready Description: Student engages in dialogue with peers with the intent of finding solutions to a problem.

Evidence for Scoring: Student engages with classmates to solve mathematical problems.

2. Accept constructive criticism and revise personal views when valid evidence warrants.

College Ready Description: Student recognizes errors in their own reasoning and revises them accordingly.

Evidence for Scoring: Student revises methods for solving exponential and logarithmic functions based on peer feedback.

B. Reasoning

1. Consider arguments and conclusions of self and others.

College Ready Description: Student understands the arguments and conclusions of other students.

Evidence for Scoring: Student considers solutions of others that are different than their own.

2. Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions.

College Ready Description: Student constructs and conveys arguments and conclusions.

Evidence for Scoring: Student writes complete and well-reasoned answers to questions.

4. Support or modify claims based on the results of an inquiry.

College Ready Description: Student understands and responds to targeted questions from the instructor regarding the activity.

Evidence for Scoring: Student explains differences in their own and other students' solutions.

D. Academic Behaviors

1. Self-monitor learning needs and seek assistance when needed.

College Ready Description: Student identifies areas of significant misunderstanding or difficulty and distinguishes these from questions whose solutions are not immediately obvious.

Evidence for Scoring: Student asks informed questions of group members and instructor.

3. Strive for accuracy and precision.

College Ready Description: Student answers questions accurately and precisely.

Evidence for Scoring: Student does not rely on hand waving or statements such as "it's obvious."

4. Persevere to complete and master tasks.

College Ready Description: Student stays on task and strives to solve difficult problems.

Evidence for Scoring: Student completes assignment despite struggling to find solutions to problems.

E. Work habits

1. Work independently.

College Ready Description: Student shows ability to work independently to develop ideas in the larger context of group work.

Evidence for Scoring: Student works individually to complete part of the assignment.

2. Work collaboratively.

College Ready Description: Student shows ability to work in a group; this involves comparing ideas, understanding those of others, and offering constructive critiques.

Evidence for Scoring: Student works with others effectively to complete parts of the assignment.

FOUNDATIONAL SKILLS

B. Writing Across the Curriculum

1. Write clearly and coherently using standard writing conventions.

College Ready Description: Student demonstrates a clear ability to write full and understandable solutions to the problems.

Evidence for Scoring: Student writes a clear explanation of why his or her solutions are different from others.

C. Research Across the Curriculum

8. Present final product.

College Ready Description: Student demonstrates a clear ability to present solutions to the class and explain the reasoning behind them.

Evidence for Scoring: Student clearly demonstrates their solutions, answers questions, and responds to comments from peers.

MATHEMATICS STANDARDS

I. Numeric Reasoning

B.1. Number operations.

College Ready Description: Student performs computations with real and complex numbers.

Evidence for Scoring: Student computes numbers with a calculator.

II. Algebraic Reasoning

B.1. Manipulating expressions.

College Ready Description: Student recognizes and uses algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (e.g., polynomials, radicals, rational expressions).

Evidence for Scoring: Student finds solutions to exponential and logarithmic functions.

VII. Functions

B.1. Analysis of functions.

College Ready Description: Student understands and analyzes the features of a function.

Evidence for Scoring: Student finds solutions to exponential and logarithmic functions.

C.2. Model real world situations with functions.

College Ready Description: Student develops a function to model a situation.

Evidence for Scoring: Student uses functions to model interest and employment problems.

VIII. Problem Solving and Reasoning

A.1. Mathematical problem solving.

College Ready Description: Student analyzes given information.

Evidence for Scoring: Student analyzes the information about the given functions or situations and use that to answer the questions.

C.2. Real world problem solving.

College Ready Description: Student uses a function to model a real world situation.

Evidence for Scoring: Student interprets real-world situations and expresses the given information in terms of exponential functions.

IX. Communication and Representation

A.2. Language, terms, and symbols of mathematics.

College Ready Description: Student uses mathematical language to represent and communicate the mathematical concepts in a problem.

Evidence for Scoring: Student uses proper mathematical language to communicate his or her solutions to problems.

C.3. Presentation and representation of mathematical work.

College Ready Description: Student explains, displays, or justifies mathematical ideas and arguments using precise mathematical language in written or oral communications.

Evidence for Scoring:

X. Connections

B.2. Connections of mathematics to nature, real world situations, and everyday life.

College Ready Description: Student understands and uses appropriate mathematical models in the natural, physical, and social sciences.

Evidence for Scoring: Student identifies exponential growth in the real world and understands the limitations of exponential growth models.

Exponential and Logarithmic Functions – Scoring Instructions

Place a score (1-4) in each row of the scoring sheet corresponding to the student's college readiness level.

Exceeding College Ready (4): Substantially exceeds the performance expectations
College Ready (3): Shows proficiency in all of the performance expectations
Approaching College Ready (2): Meets only some of the performance expectations
Initiating College Ready (1): Does not yet meet the performance expectations

Suggested Grade Conversion:

This chart reflects equal weight given to each skill. As key cognitive skills, foundational skills, and discipline content knowledge are all important elements of college readiness, we recommend this grading approach. However, you may certainly choose to implement different weights to particular scales and assign a grade at your discretion.

Score	Grade		Score	Grade		Score	Grade		Score	Grade
48	100		39	89		30	80		21	73
47	99.5		38	87		29	79.5		20	72
46	99		37	86		28	79		19	71
45	98		36	85		27	78.5		18	70
44	97		35	84.5		26	78		17	68
43	96		34	84		25	77		16	66
42	95		33	83		24	76		15	64
41	93		32	82		23	75		14	62
40	91		31	81		22	74		13	60