

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 (recognizes whether a relation is a function; 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)		

**See reverse for
comments.**

Score	College Readiness Level
35-40	Exceeding College Ready
30-34	College Ready
15-29	Approaching College Ready
0-14	Initiating College Ready

Total Score: _____

Grade: _____

See Scoring Guide for grade conversion chart.

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 conducts investigations and observations.

Evidence for Scoring: Student explores the properties of functions.

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

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

Evidence for Scoring: Student changes solutions based on feedback from peers.

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 engages in dialogue with peers about solutions to problems.

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 thorough explanations for the solutions to the problems in the assignment.

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

College Ready Description: Student revises and checks strategies and calculations.

Evidence for Scoring: Student refines their solutions to problems based on the exploration of functions.

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 is able to ask 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 the assignment despite difficulties finding solutions.

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 independently to find solutions to problems.

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 to find solutions to problems.

FOUNDATIONAL SKILLS**B. Writing Across the Curriculum****1. Write clearly and coherently using standard writing conventions.**

College Ready Description: Student writes full and understandable solutions to the problems.

Evidence for Scoring: Student writes mathematically and grammatically correct solutions to questions in the assignment.

C. Research Across the Curriculum**8. Present final product.**

College Ready Description: Student presents solutions to the class and explains the reasoning behind them.

Evidence for Scoring: Student presents solutions to the class and answers questions and responds to comments about his or her solutions.

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 function by manipulating algebraic expressions.

VII. Functions

A.1. Recognition and representation of functions.

College Ready Description: Student recognizes whether a relation is a function.

Evidence for Scoring: Student identifies which representations of relationships are functions and which are not.

B.1. Analysis of functions.

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

Evidence for Scoring: Student determines domains, ranges, and inverses of functions, to read information from the graph of a function, and to determine equality of functions.

C.2. Model real world situations with functions.

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

Evidence for Scoring: Student develops a function to model the outer surface area of a box and the number of times “hello” is said at a party.

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 and use that to answer the questions, including interpreting the graph in question 1 and identifying functions in question 5.

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 functions.

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

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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
40	100		32	89		24	79		16	71
39	99		31	87		23	78		15	70
38	98		30	85		22	77		14	68
37	97		29	84		21	76		13	66
36	96		28	83		20	75		12	64
35	95		27	82		19	74		11	62
34	93		26	81		18	73		10	60
33	91		25	80		17	72			