

Functions 11 MCR 3U

Independent Study Project

1. Cathy invests \$500.00 at 7% per year compounded annually for 10 years. $\frac{\quad}{10}$ $\frac{\quad}{10}$
 - a) Calculate the value of her investment at the end of the first five years.
 - b) What type of sequence do the values form?
 - c) Describe the relationship between the compound interest formula and geometric sequences.
2. Pg 79 of textbook Parts C-D. $\frac{\quad}{20}$ $\frac{\quad}{10}$

*Changes to part C

Change 1: Include exponential and sinusoidal functions in the parent function options.

Change 2: Use at least three different parent functions in your picture (instead of all parent functions).

*Changes to part D

Change 1: Do not include the explanations

Change 2: Include a sketch (or printout) of your picture (You may use DESMOS for this)

Functions 11 (MCR 3U)
Independent Study Project Rubric

Category	Level 1 (50-62%)	Level 2 (63-74%)	Level 3 (75-84%)	Level 4 (85-100%)
Knowledge & Application (Accuracy) /30	<ul style="list-style-type: none"> • Less than 62% of answers are correct • Used 1 or no parent functions • None of the equations match the graphs • Domains are not included 	<ul style="list-style-type: none"> • 60-69% of answers are correct • Used 2 parent functions • Some of the equations of transformations match their graphs • Most domains are incorrectly stated 	<ul style="list-style-type: none"> • 70-79% of answers are correct • Used 3 parent functions • Many equations of transformed functions match their graphs • Most domains are correctly stated 	<ul style="list-style-type: none"> • Over 80% of the answers correct • Used three or more different parent functions • All or most transformations are correctly applied (equations match their graphs) • Domains are correctly stated
Thinking & Inquiry (Independence) /12	<ul style="list-style-type: none"> • Guidance required on all questions • Ineffective strategies • No resources used 	<ul style="list-style-type: none"> • Guidance required on most questions • Strategies employed display a lack of critical thought • Used one resource before seeking guidance 	<ul style="list-style-type: none"> • Some guidance required, but most questions done independently • Strategies employed were mostly effective and show evidence of critical thought • Used more than one resource before seeking guidance 	<ul style="list-style-type: none"> • Little to no guidance required • Employed logical and effective strategies in order to independently investigate solutions that display critical thought • Used a variety of resources such as notes, handouts, tests, quizzes and textbook before seeking guidance
Thinking & Inquiry (Effort and Creativity) /12	<ul style="list-style-type: none"> • Used fewer than 3 functions • Picture is unrecognizable 	<ul style="list-style-type: none"> • Used 3-5 functions • Picture is confusing 	<ul style="list-style-type: none"> • Used 5-7 functions • Picture is clear 	<ul style="list-style-type: none"> • Used 7 or more functions • Picture is detailed and clear
Communication /20	<ul style="list-style-type: none"> • Questions are not answered directly • Solutions are unclear, disorganized and difficult to follow 	<ul style="list-style-type: none"> • Some questions are answered directly • Some solutions are unclear and difficult to follow 	<ul style="list-style-type: none"> • Most questions are answered directly • Most solutions are clear organized 	<ul style="list-style-type: none"> • All questions are answered directly • All solutions are clear and organized