

Pdf free 2 1 using transformations to graph quadratic functions Copy

in this section we study how the graphs of functions change or transform when certain specialized modifications are made to their formulas the transformations we will study fall into three broad quiz unit test about this unit we can think graphs of absolute value and quadratic functions as transformations of the parent functions x and x^2 importantly we can extend this idea to include transformations of any function whatsoever when the graph of a function is changed in appearance and or location we call it a transformation there are two types of transformations a rigid transformation⁵⁷ changes the location of the function in a coordinate plane but leaves the size and shape of the graph unchanged a non rigid transformation⁵⁸ changes the size and or shape of the graph in this topic you will learn about the most useful math concept for creating video game graphics geometric transformations specifically translations rotations reflections and dilations you will learn how to perform the transformations and how to map one figure into another using these transformations these are a few rules for the transformations of graphs transformations are changes done in the shapes on a coordinate plane by rotation or reflection or translation learn about transformations its types and formulas using solved examples and practice questions the first

transformation we'll look at is a vertical shift given the graph of f left x right the graph of g left x right f left x right c will be the graph of f left x right shifted up by c units if c is positive and or down by c units if c is negative quiz unit test about this unit learn about geometric transformations and how they're used to understand the meaning of similar and congruent transformations intro learn rigid transformations intro dilations intro identifying transformations practice up next for you identify transformations get 3 of 4 questions to level up start we call this graphing quadratic functions using transformations in the first example we will graph the quadratic function $f(x) = x^2$ by plotting points then we will see what effect adding a constant k to the equation will have on the graph of the new function $f(x) = x^2 + k$ graph a quadratic function using transformations step 1 rewrite the function in $f(x) = a(x-h)^2 + k$ form by completing the square step 2 graph the function using transformations one simple kind of transformation involves shifting the entire graph of a function up down right or left the simplest shift is a vertical shift moving the graph up or down because this transformation involves adding a positive or negative constant to the function function transformations refer to how the graphs of functions move resize reflect according to the equation of the function learn the types of transformations of functions such as translation dilation and reflection along with more examples function transformations just like transformations in geometry we can move and resize the graphs of functions let us start with a function in this case it is $f(x) = x^2$ but it could be anything $f(x) = x^2$ here are some simple things we can do to move or scale it on the graph we can move it up or down by adding a constant

to the y value we examined the following changes to $f(x)$ reflections
translations dilations this page is a summary of all of the function transformation we have
investigated for more information on each transformation follow the links within each section
below course algebra 2 identify function transformations google classroom microsoft teams g
is a transformation of f the graph below shows f as a solid blue line and g as a dotted red line
2 4 6 8 4 6 8 2 4 6 8 4 6 8 what is the formula of g in terms of f choose 1 answer 1 $3f(x) + 1$
 $3f(x) - 3$ b $3f(x)$ three of the most important transformations are after any of those
transformations turn flip or slide the shape still has the same size area angles and line
lengths resizing the other important transformation is resizing also called dilation contraction
compression enlargement or even expansion the shape becomes bigger or smaller there are
two types of transformations a rigid transformation changes the location of the function in a
coordinate plane but leaves the size and shape of the graph unchanged a non rigid
transformation changes the size and or shape of the graph theorem 1.7 transformations
suppose f is a function if $a \neq 0$ and $b \neq 0$ then to graph $g(x) = af(bx - h) + k$ subtract h from each
of the x coordinates of the points on the graph of f this results in a horizontal shift to the left
if $h > 0$ or right if $h < 0$ what single transformation was applied to triangle a to get triangle b learn
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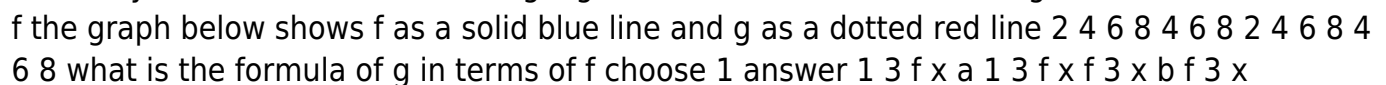
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