

Precalculus - Transformations of Graphs - Test

Common Core F-BF.B.3, F-IF.C.7b · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 20-point test covers shifts, reflections, stretches, even and odd functions and a modeling problem (F-BF.B.3). You have 45 minutes. Show your work.

About this test

- Grade: Precalculus
- Chapter: Transformations of Graphs
- Standards: F-BF.B.3, F-IF.C.7b
- Time: 45 minutes
- Total: 20 points

Question 1 - Describe transformations [2 pts]

Describe the transformations that change $y = x^2$ into $y = -(x+2)^2 + 4$.

Question 2 - Move points [2 pts]

The point $(4, -3)$ is on f . Find the matching point on (a) $y = f(x-1) + 2$; (b) $y = -2f(x)$.

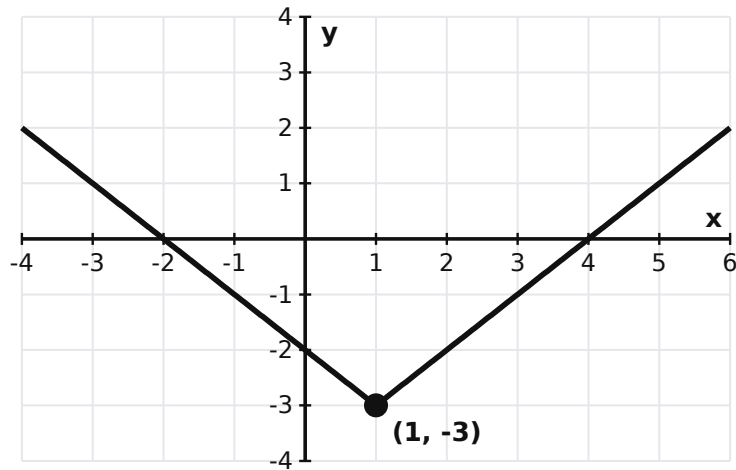
Question 3 - Write an equation [2 pts]

Write the equation of $y = \sqrt{x}$ shifted left 4 and then reflected over the x -axis, and state its range.

Question 4 - Even and odd [2 pts]

Decide whether each is even, odd or neither: (a) $f(x) = x^3 - 5x$; (b) $g(x) = x^2 + 1$.

Question 5 - Read an absolute value graph [3 pts]



A transformation of $y = |x|$.

(a) Write the equation of the graph. (b) State the range. (c) Find the x -intercepts.

Question 6 - Transform a table [2 pts]

x	0	1	2	3
$f(x)$	4	1	0	1

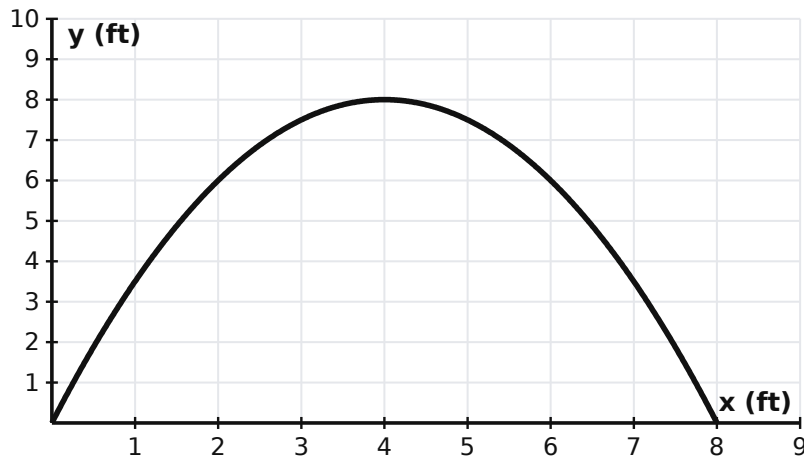
Values of f .

Complete a table for $g(x) = 2f(x) - 1$ using the same x -values.

Question 7 - Sequence of transformations [2 pts]

Describe the transformations from $y = \sqrt{x}$ to $y = 3\sqrt{x-2}+1$ and find the value at $x = 11$.

Question 8 - Fountain [3 pts]



Water from a fountain.

Water follows $y = -0.5(x-4)^2 + 8$ (feet). (a) Find the greatest height. (b) Find the height when $x = 2$. (c) Find where it lands.

Question 9 - Order of transformations [2 pts]

Write the equation obtained from $y = x^2$ by shifting right 3, stretching vertically by 2, and reflecting over the x -axis.