

Precalculus - Combining and Composing Functions - Test

Common Core F-BF.A.1b, F-BF.A.1c · maths-pdf.fr/en/

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

This 20-point test covers operations on functions, composition, domains and a model problem (F-BF.A.1b, F-BF.A.1c). You have 45 minutes. Show your work.

About this test

- Grade: Precalculus
- Chapter: Combining and Composing Functions
- Standards: F-BF.A.1b, F-BF.A.1c
- Time: 45 minutes
- Total: 20 points

Question 1 - Sum and product [2 pts]

Let $f(x) = x^2 - 2x$ and $g(x) = 2x + 5$. Find $(f + g)(3)$ and $(fg)(-1)$.

Question 2 - Composite formulas [2 pts]

Let $f(x) = x^2 + 1$ and $g(x) = 3x - 2$. Write $f(g(x))$ and $g(f(x))$ in standard form.

Question 3 - Table composition [2 pts]

x	0	1	2	3
f(x)	2	5	1	4
g(x)	3	0	2	1

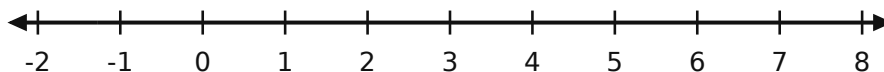
Values of f and g.

Find $f(g(2))$ and $g(g(0))$.

Question 4 - Domain of a quotient [2 pts]

Let $f(x) = \sqrt{x+1}$ and $g(x) = x-5$. Find the domain of $\frac{f}{g}$.

Question 5 - Domain of a composite [3 pts]



Number line for graphing the domain.

Let $f(x) = \frac{1}{x-2}$ and $g(x) = \sqrt{x}$. Find the domain of $f(g(x))$ in interval notation.

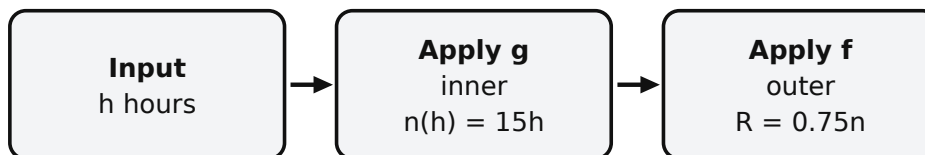
Question 6 - Decompose [2 pts]

Write each function as $f(g(x))$: (a) $h(x) = \frac{1}{x^2+4}$; (b) $k(x) = |3x-7|$.

Question 7 - Evaluate composites [2 pts]

Let $f(x) = 2x-1$ and $g(x) = x^2$. Find $(g \circ f)(3)$ and $(f \circ g)(3)$.

Question 8 - Bakery model [3 pts]



Hours to cookies to revenue.

Jamal's stand bakes $n(h) = 15h$ cookies in h hours and sells them for $R(n) = 0.75n$ dollars. (a) Write $R(n(h))$. (b) Find the revenue after 8 hours. (c) Find the hours needed to reach \$180.

Question 9 - Inverse check [2 pts]

Show that $f(x) = 3x-7$ and $g(x) = \frac{x+7}{3}$ satisfy $f(g(x)) = x$ and $g(f(x)) = x$.