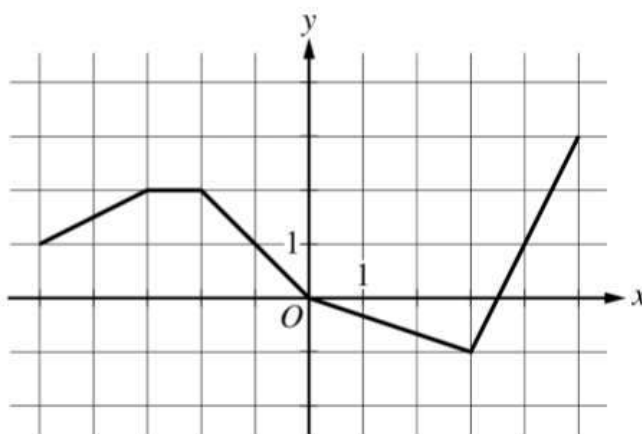


Data, graph, and composite functions 2017 6

AP Calculus

x	$g(x)$	$g'(x)$
-5	10	-3
-4	5	-1
-3	2	4
-2	3	1
-1	1	-2
0	0	-3



Graph of h

Let f be the function defined by $f(x) = \cos(2x) + e^{\sin x}$.

Let g be a differentiable function. The table above gives values of g and its derivative g' at selected values of x .

Let h be the function whose graph, consisting of five line segments, is shown in the figure above.

- Find the slope of the line tangent to the graph of f at $x = \pi$.
- Let k be the function defined by $k(x) = h(f(x))$. Find $k'(\pi)$.
- Let m be the function defined by $m(x) = g(-2x) \cdot h(x)$. Find $m'(2)$.
- Is there a number c in the closed interval $[-5, -3]$ such that $g'(c) = -4$? Justify your answer.