

2016 AP[®] CALCULUS AB FREE-RESPONSE QUESTIONS

| x | $f(x)$ | $f'(x)$ | $g(x)$ | $g'(x)$ |
|-----|--------|---------|--------|---------|
| 1 | -6 | 3 | 2 | 8 |
| 2 | 2 | -2 | -3 | 0 |
| 3 | 8 | 7 | 6 | 2 |
| 6 | 4 | 5 | 3 | -1 |

6. The functions f and g have continuous second derivatives. The table above gives values of the functions and their derivatives at selected values of x .

(a) Let $k(x) = f(g(x))$. Write an equation for the line tangent to the graph of k at $x = 3$.

(b) Let $h(x) = \frac{g(x)}{f(x)}$. Find $h'(1)$.

(c) Evaluate $\int_1^3 f''(2x) \, dx$.

STOP

END OF EXAM