

1. (3+4+4+4 points) Suppose that  $f$  and  $g$  are differentiable functions with values given by the following table:

$x$	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
2	2	5	-1	-6
4	4	2	12	-2

(a) Find the derivative of  $n(x) = \pi^\pi + e^{\log 15} + f(2)$  when  $x = 4$ .

(b) Find  $h'(2)$  if  $h(x) = \frac{\ln(f(x))}{g(x)}$ .

(c) Find the derivative of  $k(x) = f(x) \cos\left(\frac{\pi}{6}x\right)$  when  $x = 2$ .

(d) Find  $j'(2)$  if  $j(x) = f(g(x^2))$ .