

1. Let  $f$  be a differentiable function such that  $f(2) = 12$ ,  $f(5) = 10$ ,  $f'(2) = -7$  and  $f'(5) = 4$ .

The function  $g$  is differentiable and  $g(x) = f^{-1}(x)$  for all  $x$ . What is the value of  $g'(12)$ ?

- a)  $-1/7$       b)  $-1/2$       c)  $1/4$       d)  $1/9$   
e) The value of  $g'(12)$  cannot be determined

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The function  $g$  is differentiable and  $g(x) = f^{-1}(x)$  for all  $x$ . What is the value of  $g'(10)$ ?

- a)  $-1/7$       b)  $-1/2$       c)  $1/4$       d)  $1/9$   
e) The value of  $g'(10)$  cannot be determined

1. Let  $f$  be a differentiable function such that  $f(3) = 11$ ,  $f(12) = 6$ ,  $f'(3) = 9$  and  $f'(12) = -2$ .

The function  $g$  is differentiable and  $g(x) = f^{-1}(x)$  for all  $x$ . What is the value of  $g'(11)$ ?

- a)  $-1/7$       b)  $-1/2$       c)  $1/4$       d)  $1/9$   
e) The value of  $g'(11)$  cannot be determined

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The function  $g$  is differentiable and  $g(x) = f^{-1}(x)$  for all  $x$ . What is the value of  $g'(6)$ ?

- a)  $-1/7$       b)  $-1/2$       c)  $1/4$       d)  $1/9$   
e) The value of  $g'(6)$  cannot be determined

4. If  $f(3) = -1$ ,  $f'(3) = \frac{6}{5}$ , and  $g(x) = f^{-1}(x)$ ,

what is the equation of the tangent line to  $g(x)$   
at  $x = -1$ ?

A)  $y + 3 = \frac{-6}{5}(x - 1)$

B)  $y - 3 = \frac{6}{5}(x - 1)$

C)  $y + 1 = \frac{5}{6}(x - 3)$

D)  $y - 3 = \frac{5}{6}(x + 1)$

E)  $y + 3 = \frac{-5}{6}(x - 1)$

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what is the equation of the tangent line to  $g(x)$   
at  $x = -1$ ?

A)  $y - 3 = \frac{-6}{5}(x + 1)$

B)  $y - 3 = \frac{6}{5}(x + 1)$

C)  $y + 1 = \frac{6}{5}(x - 3)$

D)  $y + 3 = \frac{5}{6}(x + 1)$

E)  $y - 3 = \frac{-5}{6}(x + 1)$