

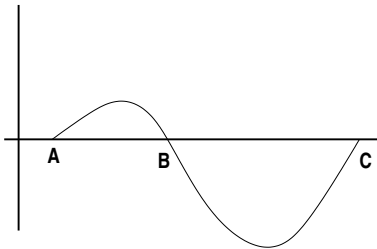
**Week in Review # 9**  
**Sections 5.5, 7.1, 7.2**

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**Things to know:**

- Understand that  $\int_a^b f'(x)dx$  is the total change of  $f(x)$  from  $x = a$  to  $x = b$
  - Be able to compute antiderivatives by the integration rules and by u-substitution.
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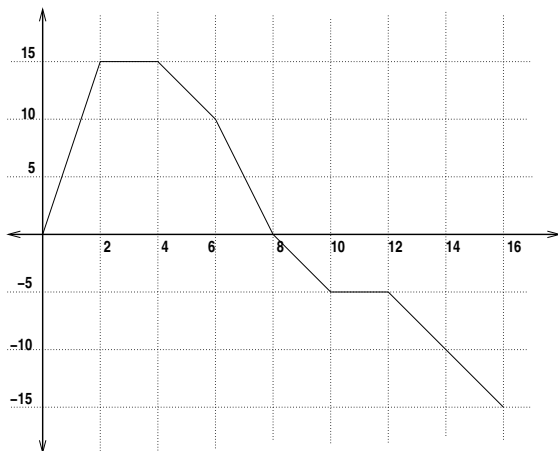
1. Use the graph is of  $f'(x)$  to determin which of these two values are the largest.



(a)  $f(a)$  or  $f(b)$

(b)  $f(a)$  or  $f(c)$

2. The graph is of  $f'(x)$ . Fill in the table values for  $f(x)$  given that  $f(6) = 100$



x	0	2	4	12	14	16
$f(x)$						

3. Which of these is an antiderivative of  $f'(x) = 4xe^{2x}$ ?

(a)  $f(x) = 2x^2e^{2x} + xe^{2x} + C$

(b)  $f(x) = 2xe^{2x} - e^{2x} + C$

(c)  $f(x) = (2x - 1)e^{2x}$

4. Find  $f(x)$  if  $f'(x) = 6e^{2x} + 8\sin(2x)$  and  $f(0) = 20$

5. Compute these integrals.

(a)  $\int 7x^4 + 5x^3 + 8 \, dx$

(b)  $\int 3x^2 \, dw$

(c)  $\int 5x + \frac{5}{x} + \frac{6}{x^4} \, dx$

$$(d) \int \frac{1}{e^{3x}} + \frac{1}{4x} dx$$

$$(e) \int x^2 \sqrt{x} dx$$

$$(f) \int 6 \cos(3x) + e dx$$

$$(g) \int 4x^3(1 + 2x^4)^8 dx$$

$$(h) \int \frac{x^4}{\sqrt{x^5 + 5}} dx$$

$$(i) \int (8x^3 + 14) \sin(x^4 + 7x) dx$$

$$(j) \int \sin(2x) (\cos(2x) + 10)^7 dx$$

$$(k) \int \frac{12xe^{x^2}}{1 + e^{x^2}} dx$$

$$(l) \int 12 \sin(6x + 7) \cos(6x + 7) dx$$