

Spring 2012

11. The integral

$$\int_1^{\infty} x^2 e^{-2x} dx$$

is equal to

A) 1

B)  $-e^{-2}$

C)  $\frac{5}{4}e^{-2}$

D)  $\frac{1}{4}$

E)  $\frac{1}{4}e^{-2}$

F) diverges

**Spring 2011**

8. The improper integral  $\int_0^1 \frac{1}{(2x-1)^{\frac{1}{3}}} dx$

(a) = 0.    (b) =  $\frac{\ln(2)}{2}$ .    (c) =  $-\frac{\ln(2)}{2}$ .    (d) =  $1 - \ln(5)$ .    (e) =  $\frac{\ln(3)}{2}$ .    (f) diverges.

**Spring 2010**

8. Evaluate the improper integral  $\int_2^{\infty} \frac{1}{(x-1)^3} dx$ .

- (a)  $\frac{1}{2}$     (b)  $\frac{\pi}{2} - e$     (c)  $\frac{\pi}{4}$     (d)  $\sqrt{\pi}$     (e)  $\ln 2 + \frac{1}{3}$     (f) divergent

**Fall 2008**

10. Evaluate the following integral:  $\int_0^1 \frac{3 \ln 4x}{\sqrt{x}} dx$

- a)  $12 \ln 2 - 12$    b) 0   c)  $12(1 - \ln 2)$    d) 0   e) 12   f) divergent

Fall 2008

11. Evaluate the integral or show it is divergent:

$$\int_1^{\infty} \frac{dx}{x \ln x}$$

- a) 0    b) 1    c) e    d)  $e^e$     e)  $\ln(4)$     f) divergent

Fall 2007

5. Evaluate:  $\int_0^e \frac{x^3}{3} \ln x \, dx$

a)  $\frac{e^2}{2}$

b)  $\frac{e^2}{2} - \frac{1}{2}$

c)  $\frac{e^4}{36} + \frac{1}{32}$

d)  $\frac{e^4}{36}$

e)  $\frac{e^4}{16} - \frac{1}{4}$

f)  $\frac{e^4}{16}$

Fall 2007

6. Evaluate:  $\int_4^{\infty} \frac{dx}{x^2 - 6x + 10}$

a)  $\frac{\sqrt{3}}{2} + \frac{1}{2}$

b)  $\frac{\sqrt{3}}{2} + \frac{1}{4}$

c)  $\frac{\sqrt{3}}{4} + \frac{1}{4}$

d)  $\frac{\pi}{2}$

e)  $\frac{\pi}{4}$

f) diverges

Math 104- Rimmer  
Hand in Hw # 7

Name \_\_\_\_\_  
Recit. # \_\_\_\_\_

**ANSWERS:**

**Spring 2012 # 11: C**

**SPRING 2011 # 8: A**

**SPRING 2010 # 8: A**

**FALL 2008 # 10: A**

**FALL 2008 # 11: F**

**FALL 2007 # 5: F**

**FALL 2007 # 6: E**