

Week 13 Friday Homework (1329219)

Question 12345678910111213141516

1. Question DetailsSCalcET6 5.5.AE.03. [1291246]

[Video Example](#) [Online Textbook](#)**EXAMPLE 3** Evaluate the following integral.

$$\int \frac{x}{\sqrt{4-4x^2}} dx$$

SOLUTION Let $u = 4 - 4x^2$. Then $du =$

$$\boxed{} \text{ , so } x dx = \boxed{} \text{ and}$$


$$\int \frac{x}{\sqrt{4-4x^2}} dx = \boxed{} \int \left(\frac{1}{\sqrt{u}} \right) du$$

$$= \boxed{} \int u^{-1/2} du$$

$$= \boxed{} (2\sqrt{u}) + C$$

$$= \phantom{\boxed{}} + C$$

2. Question DetailsSCalcET6 5.5.AE.06. [1291056]

[Video Example](#) [Online Textbook](#)**EXAMPLE 6** Evaluate the following integral.

$$\int \tan(x) dx$$

SOLUTION First we write **tangent** in terms of sine and cosine:

$$\int \tan(x) dx = \int \frac{\sin(x)}{\cos(x)} dx$$

This suggests that we should substitute $u = \cos(x)$, since then $du =$

$$\boxed{} dx \text{ and so:}$$


$$\int \tan(x) dx = \int \frac{\sin(x)}{\cos(x)} dx$$

$$= - \int \frac{du}{u}$$

$$= -\ln(|u|) + C$$

$$= \boxed{} + C$$

3. Question DetailsSCalcET6 5.5.AE.09. [1290041]

[Video Example](#) [Online Textbook](#)**EXAMPLE 9** Evaluate the integral.

$$\int_1^{e^3} \frac{\ln(x)}{x} dx$$

SOLUTION We let $u = \ln(x)$ because its differential $du = dx/x$ occurs in the integral. When $x = 1$, $u = \ln(1^3) = \boxed{}$; when $x = e^3$, $u = \ln(e^3) = 3$. Thus,

$$\int_1^{e^3} \frac{\ln(x)}{x} dx = \int_0^3 u du$$

$$= \boxed{} \Big|_0^3$$

$$= \boxed{}$$

4. Question DetailsSCalcET6 5.5.Tut.09. [700162]

5. Question DetailsSCalcET6 5.5.001. [1291151]
Evaluate the integral by making the given substitution.

$$\int e^{-40x} dx, u = -40x$$

+ C

6. Question DetailsSCalcET6 5.5.002.MI. [1386561]
Evaluate the integral by making the given substitution.

$$\int x^3 (3 + x^4)^6 dx, u = 3 + x^4$$

+ C [Tutorial](#)

7. Question DetailsSCalcET6 5.5.003.MI. [1386551]
Evaluate the integral by making the given substitution.

$$\int x^2 \sqrt{x^3 + 15} dx, u = x^3 + 15$$

+ C [Tutorial](#)

8. Question DetailsSCalcET6 5.5.004. [1291038]
Evaluate the integral by making the given substitution.

$$\int \frac{dt}{(1 - 7t)^6}, u = 1 - 7t$$

+ C

9. Question DetailsSCalcET6 5.5.005. [1291380]
Evaluate the integral by making the given substitution.

$$\int (\cos(\theta))^9 \sin(\theta) d\theta, u = \cos(\theta)$$

 + C

10. Question DetailsSCalcET6 5.5.008.MI. [1387027]
Evaluate the indefinite integral.

$$\int x^2 (x^3 + 9)^8 dx$$

 + C [Tutorial](#)

11. Question DetailsSCalcET6 5.5.012. [1291491]
Evaluate the indefinite integral.

$$\int \frac{x}{(x^2 + 9)^8} dx$$

 + C

12. Question DetailsSCalcET6 5.5.013.MI. [1386687]
Evaluate the indefinite integral. (Remember to use $\ln|v|$ where appropriate.)

$$\int \frac{dx}{9 - 2x}$$

 + C [Tutorial](#)

13. Question DetailsSCalcET6 5.5.016. [1291100]
Evaluate the indefinite integral. (Remember to use $\ln|u|$ where appropriate.)

$$\int \frac{x^7}{x^8 + 4} dx$$

 + C

14. Question DetailsSCalcET6 5.5.019.MI. [1387714]
Evaluate the indefinite integral.

$$\int \frac{(\ln x)^8}{x} dx$$

 + C [Tutorial](#)

15. Question DetailsSCalcET6 5.5.023. [1291747]
Evaluate the indefinite integral.

$$\int \cos(\theta) (\sin(\theta))^{37} d\theta$$

 + C

16. Question DetailsSCalcET6 5.5.042.MI. [1386880]
Evaluate the indefinite integral.

$$\int \frac{x^{37}}{1 + x^{76}} dx$$

 + C [Tutorial](#)

Assignment Details

Name (AD): **Week 13 Friday Homework (1329219)**

Submissions Allowed: **5**

Category: **Homework**

Code:

Locked: **No**

Feedback Settings

Before due date

Question Score

Assignment Score

Publish Essay Scores

After due date

Question Score

Assignment Score

Publish Essay Scores

8/6/2010

Author: **Jernigan, John** (jjernigan@ccp.edu)

Last Saved: **Aug 1, 2010 05:07 PM EDT**

Permission: **Protected**

Randomization: **Person**

Which graded: **Last**

Assignment Previewer

Question Part Score	Key
Mark	Question Part Score
Add Practice Button	Solution
Help/Hints	Mark
Response	Add Practice Button
Save Work	Help/Hints
	Response