

Test 1 (Review)

Part I -- Multiple choice

1. WebW. 5.5, 1-5 (substitution)

2. WebW. 6.2, 1-14 (trigonometric substitutions)

3. WebW. 6.1, 1-4 (integration by parts)

$$\int (x^2+x+2) \cos(3x) dx$$

$$\int (x^3+x+1)\ln(x) dx$$

4. WebW. 6.2, 1, 2, 3 (trigonometric substitution)

WebW. 6.2, 8, 9

5. WebW. 6.3, 8 (partial fractions)

$$\int 1/((x+1)(x^2+2)) dx$$

6. WebW. 6.4. (Table of integrals)

Use

$$\int u^2/\sqrt{a^2-u^2} du = -u\sqrt{a^2-u^2}/2+a^2\arcsin(u/a)/2+C$$

to find

$$\int \exp(3x)/\sqrt{4-\exp(2x)} dx$$

7. WebW. 6.5,2 (Simpson's rule, trapezoid rule, midpoint rule)

PART II -- Free response

1. Integration by parts

WebW. 6.1, 1-5

2. Partial fractions

WebW. 6.3, 3, 4

$$\int (3-x)/((5x-1)(x-4)) dx$$

3. Trigonometric substitution
WebW. 6.2, 9-12

4. Trigonometric substitution
WebW. 6.2, 16

$$\int x^2/\sqrt{1+x^2} dx$$