

Write your name, section number (054 for 11:30, 039 for 12:30), and quiz number on the top of your quiz.

Place your quiz face down on your desk when you are done.

QUIZ 1

1. Evaluate:

$$\int (7e^x - 8 \sec(x) \tan(x)) dx$$

2. Find the area of the region bounded by the following equations:

$$y = \frac{3x + 1}{\sqrt{x}}, y = 0, x = 1, x = 4$$

QUIZ 1 Solutions

1. The integral is evaluated as follows:

$$\begin{aligned} \int 7e^x - 8 \sec(x) \tan(x) dx &= 7 \int e^x dx - 8 \int \sec(x) \tan(x) dx \\ &= 7e^x - 8 \sec(x) + C \end{aligned}$$

2. Since the area can be expressed as $\int_1^4 \frac{3x+1}{\sqrt{x}} dx$, the area is:

$$\begin{aligned} \int_1^4 \frac{3x + 1}{\sqrt{x}} dx &= \int_1^4 3x^{1/2} + x^{-1/2} dx \\ &= \left[2x^{3/2} + 2x^{1/2} \right]_1^4 \\ &= (2(4)^{3/2} + 2(4)^{1/2}) - (2(1)^{3/2} + 2(1)^{1/2}) \\ &= (2(8) + 2(2)) - (2 + 2) = 16 \end{aligned}$$