# Experiments in Exerquiz

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## Abstract

The purpose of this article is to determine whether the Exerquiz package works properly with the Pdfscreen package of C. V. Radhakrishnan



Many thanks go to my wife Kira and my son, Alexander. Without them I could have not finished this project.


# Contents



# 1. On-Line Exercises

A well-designed sequences of exercises can be of aid to the student. The `exercise` environment makes it easy to produce electronic exercises. By using the `forpaper` option, you can also make a paper version of your exercises. See the `Webeqman.pdf` reference manual.

EXERCISE 1. Evaluate the integral $\int x^2 e^{2x}\, dx$.

## 2. Short Quizzes with/without Solutions

Below is a `shortquiz` without solution.

Quiz. Was it in Xanadu did Kubla Kahn a stately pleasure dome decree?

(a) True (b) False

Below is a `shortquiz` with a solution.

Quiz. In what year did Columbus sail the ocean blue?

(a) 1490 (b) 1491 (c) 1492 (d) 1493

These two types can be bundled together using the `questions` environment.

Quiz. Answer each of the following. Passing is 100%.

**1.** Was it in Xanadu did Kubla Kahn a stately pleasure dome decree?

(a) True (b) False

**2.** In what year did Columbus sail the ocean blue?

(a) 1490 (b) 1491 (c) 1492 (d) 1493

# 3. Graded Quizzes with JavaScript

Here is a graded quiz using simple links. Might be suitable for a limited number of questions.

Begin Quiz Using the discriminant, $b^2-4ac$, respond to each of the following questions.

**1.** Is the quadratic polynomial $x^2 - 4x + 3$ irreducible?

(a) Yes (b) No

**2.** Is the quadratic polynomial $2x^2 - 4x + 3$ irreducible?

(a) Yes (b) No

**3.** How many solutions does the equation $2x^2 - 3x - 2 = 0$ have?

(a) none (b) one (c) two

End Quiz

Score:

By using the *-option, you can create a multiple choice set of question using checkboxes.

Begin Quiz Using the discriminant, $b^2-4ac$, respond to each of the following questions.

**1.** Is the quadratic polynomial $x^2 - 4x + 3$ irreducible?

☐ Yes ☐ No

**2.** Is the quadratic polynomial $2x^2 - 4x + 3$ irreducible?

☐ Yes ☐ No

**3.** How many solutions does the equation $2x^2 - 3x - 2 = 0$ have?

☐ none ☐ one ☐ two

End Quiz Score:

# Solutions to Quizzes

**Solution to Quiz:** Columbus sailed the ocean blue in 1492. End Quiz

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# Solutions to Exercises

**Exercise 1.** We evaluate by `integration by parts`:

$$\begin{aligned}
\int x^2 e^{2x}\,dx &= \frac{1}{2}x^2e^{2x} - \int xe^{2x}\,dx && u = x^2,\ dv = e^{2x}\,dx \\
&= \frac{1}{2}x^2e^{2x} - \left[\frac{1}{2}xe^{2x} - \int \frac{1}{2}e^{2x}\,dx\right] && \text{integration by parts} \\
&= \frac{1}{2}x^2e^{2x} - \frac{1}{2}xe^{2x} + \frac{1}{2}\int e^{2x}\,dx && u = x^2,\ dv = e^{2x}\,dx \\
&= \frac{1}{2}x^2e^{2x} - \frac{1}{2}xe^{2x} + \frac{1}{4}e^{2x} && \text{integration by parts} \\
&= \frac{1}{4}(2x^2 - 2x + 1)e^{2x} && \text{simplify!}
\end{aligned}$$

Exercise 1



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