

Complex Tests

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Image credit: derivative of [image](#) by tjevans from [Pixabay](#)

Satellite 1 makes a circular orbit around the Earth with a radius $r_1 = R$.
 Satellite 2 makes a circular orbit around the Earth with a radius $r_2 = 2R$.
 We let v represent the speed of a satellite and a represent the magnitude of a satellite's acceleration. Which
 one of the following choices gives the correct relation between the speeds and accelerations of the satellites?

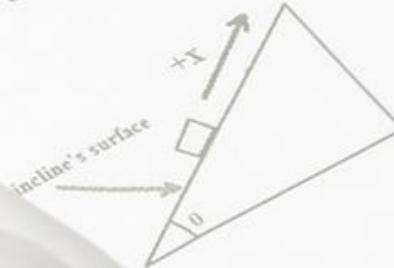
(A) $v_2 = \frac{1}{\sqrt{2}} v_1$; $a_2 = \frac{1}{4} a_1$
 (B) $v_2 = \frac{1}{2} v_1$; $a_2 = \frac{1}{4} a_1$
 (C) $v_2 = \frac{1}{\sqrt{2}} v_1$; $a_2 = \frac{1}{2} a_1$
 (D) $v_2 = \frac{1}{2} v_1$; $a_2 = \frac{1}{2} a_1$
 (E) $v_2 = v_1$; $a_2 = \frac{1}{2} a_1$

23. A car moves with constant speed around a horseshoe-shaped path as shown with
 the arrows in the figure. Which one of the following choices best describes the
 direction of the average acceleration of the car in traveling from W to X?

(A)  (B)  (C)  (D)  (E) There is no average acceleration

24. A mass on a frictionless incline has a gravitational force F_g acting vertically downward. The mass remains at rest and the incline makes an angle θ with the horizontal. Which one of the following choices best describes the direction of the applied force F_a acting on the mass?

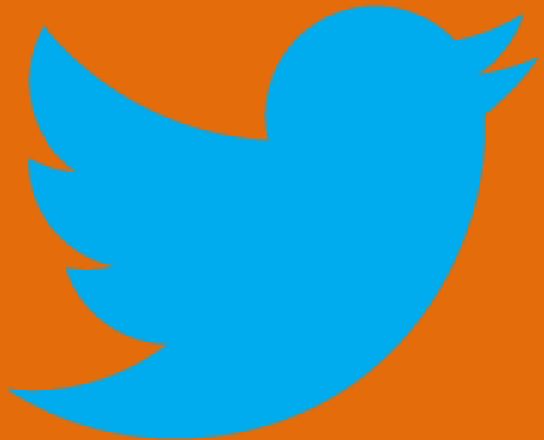
(A) The applied force F_a acts vertically upward.
 (B) The applied force F_a acts vertically downward.
 (C) The applied force F_a acts horizontally to the right.
 (D) The applied force F_a acts horizontally to the left.
 (E) This is a completely impossible situation.



Which one of the following choices best describes the total force F_{total} acting on the mass?



Join the Conversation



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Quick Poll

Which question types have you used
in Brightspace quizzes?

(select all that apply)

True or False (T/F)

Multiple Choice (M/C)

Multi-Select (M-S)

Written Response (WR)

Short Answer (SA)

Multi-Short Answer (MSA)

Fill in the Blanks (FIB)

Matching (MAT)

Ordering (ORD)

Arithmetic (2+2)

Significant Figures (x10)

Likert (LIK)

Respondus 4.0

- Windows-based authoring tool that makes it easy to create and manage exams in Brightspace
- We have a site license
 - Email jflorent@xula.edu for download link and license key

Respondus® Version 4.0

Instructor Quick Start Guide

WHAT IS RESPONDUS?

Respondus is a Windows-based authoring tool that makes it easy to create and manage exams for Blackboard Learn, Brightspace, Canvas, Moodle, and other learning systems.

REGISTER A PUBLISHER TEST BANK

Thousands of publisher test banks are available in Respondus format (free to instructors who adopt a participating textbook).



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CAT FooD
(for thought)

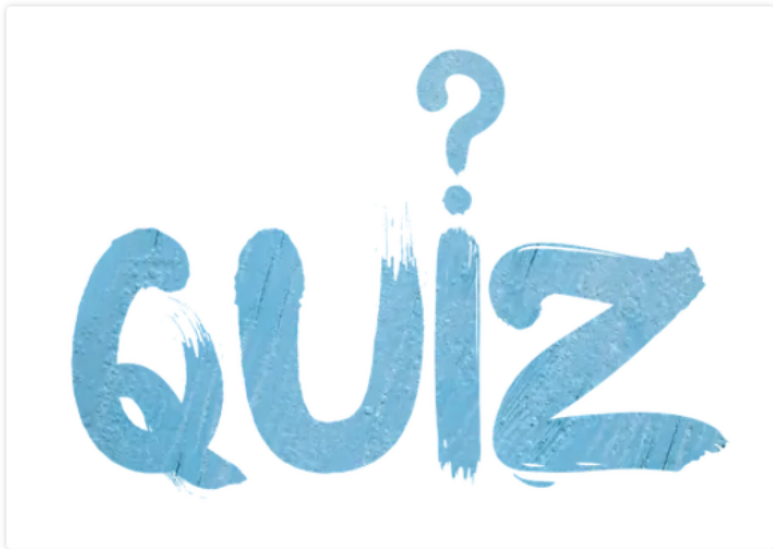
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ABOUT THIS BLOG

Brightspace Tip #146: Test/Quiz Question Generator

Janice Florent • March 25, 2020 • [Leave a comment](#)

Do you want your students to take a quiz or test online? Do you have a test that you normally administer on paper and you don't want to retype all the questions into Brightspace. Learning and Teaching Services at Algonquin College developed a [Test/Quiz Question Generator](#) that provides an easy way of creating a collection of questions that can be imported into Brightspace.



BRIGHTSPACE

BRIGHTSPACE DOCUMENTS

- Guide to Taking Tests in Brightspace
- Record, Upload, and Share Video on YouTube

BRIGHTSPACE FAQ

- Respondus LockDown Browser FAQ
- Respondus Monitor FAQ
- VoiceThread FAQ
- ePortfolios FAQ

PODCAST

Teaching, Learning, and Everything Else

Conversation #95: Tia Smith on Media and COVID-19

📅 April 7, 2020

🕒 22 minutes

Conversation #94: #KeepTeachingXULA (Part 2)

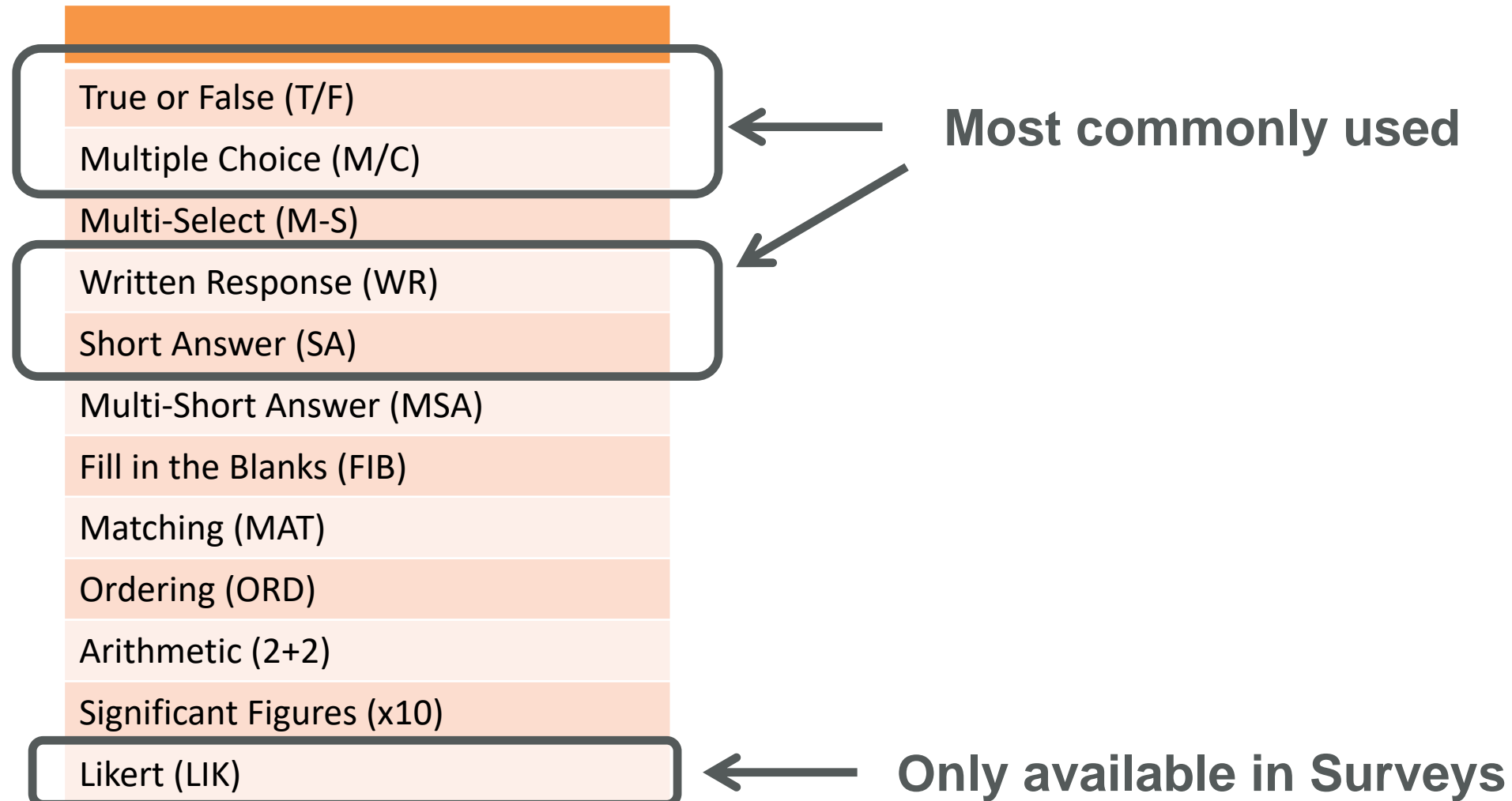
📅 March 31, 2020

- Question Types
 - Multiple Choice (M/C)
 - Multi Select (M-S)
 - Written Response (WR)
 - Fill in the Blanks (FIB)
 - Matching (MAT)
 - Ordering (ORD)



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Question Types



Question Types

True or False (T/F)

Multiple Choice (M/C)

Multi-Select (M-S)

Written Response (WR)

Short Answer (SA)

Multi-Short Answer (MSA)

Fill in the Blanks (FIB)

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Arithmetic (2+2)

Significant Figures (x10)

Likert (LIK)

**Can not be automatically graded;
instructor must grade this
question type**

Question Types

True or False (T/F)
Multiple Choice (M/C)
Multi-Select (M-S)
Written Response (WR)
Short Answer (SA)
Multi-Short Answer (MSA)
Fill in the Blanks (FIB)
Matching (MAT)
Ordering (ORD)
Arithmetic (2+2)
Significant Figures (x10)
Likert (LIK)

**Less commonly used
question types**

Multi-Select Questions

- One or more answers are correct
- Great for “All-That-Apply” type questions

Preview

Which of the following is a prime number? (select all that apply)

☐ 2☐ 3☐ 4☐ 5

Grading Options

Enumeration

no enumeration ▼

Style

☒ Vertical ☐ Horizontal

Grading

☒ All or nothing ☐ Right minus wrong ☐ Correct answers

Randomize options

☐

Multi-Select Questions

- Grading options for Multi-Select questions:
 - **All or nothing**
 - Receive full points for the question only if they select all the correct answers and none of the incorrect answers.
 - **Right minus wrong**
 - Receive points equal to number of right answers minus the number of incorrect answers they choose.
 - **Correct answers**
 - Receive points for each correct answer selected and each incorrect answer left blank. Incorrect answers selected, and correct answers left blank, are not counted.

Question Types and Regular Expressions

True or False (T/F)	
Multiple Choice (M/C)	
Multi-Select (M-S)	
Written Response (WR)	
Short Answer (SA)	Can use <u>Regular</u> <u>Expressions</u>
Multi-Short Answer (MSA)	
Fill in the Blanks (FIB)	
Matching (MAT)	
Ordering (ORD)	
Arithmetic (2+2)	
Significant Figures (x10)	
Likert (LIK)	



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Regular Expressions

- Evaluate responses against a set of acceptable values

For example, the option for a correct answer of

gr[ae]y would consider “gray” and “grey” to be correct

colo?r* would consider “color” and “colour” to be correct

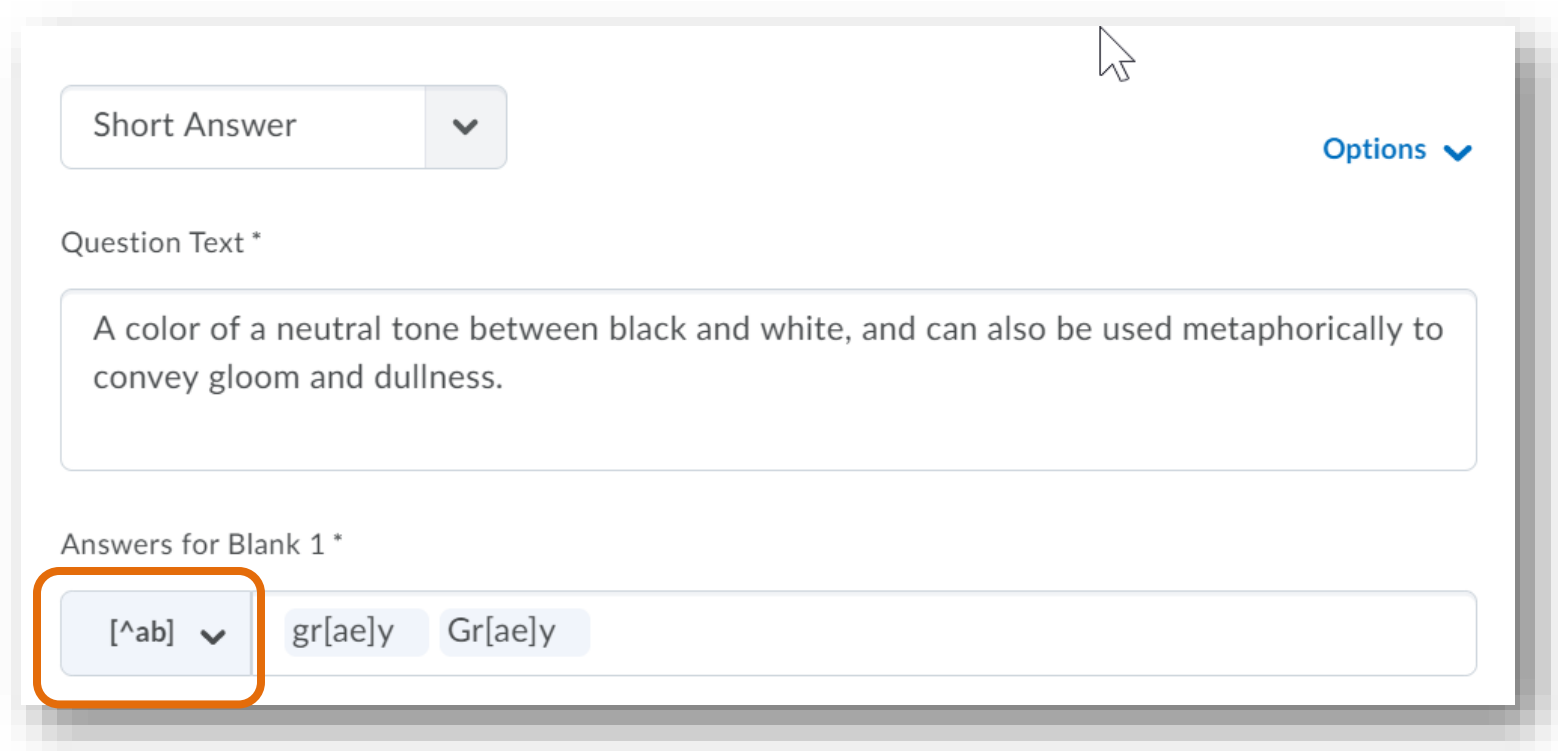
Ta[s|z]mania would consider “Tasmania” and “Tazmania” to be correct



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Regular Expressions Example

Short Answer (SA) Question



Short Answer ▼

Options ▼

Question Text *

A color of a neutral tone between black and white, and can also be used metaphorically to convey gloom and dullness.

Answers for Blank 1 *

[^ab] ▼ gr[ae]y Gr[ae]y

NOTE: Select Regular Expressions from the abc dropdown list.

Fill in the Blanks (FIB) Question

Edit Fill in the Blanks Question

General

Title

Image

Insert an Image

Description:

Blank # 1:

Size: 10 ▾

+ Add Answer

1

Check Answers

Answer	Weight (%)	Evaluation	Remove
<input type="text" value="Gr[ae]y"/>	<input type="text" value="100"/>	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression	
<input type="text" value="gr[ae]y"/>	<input type="text" value="100"/>	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression	

Text # 1:

Preview of Example #1

Fill in the Blanks (FIB) Question

Question 3 (5 points)



is a color of a neutral tone between black and white, and can also be used metaphorically to convey gloom and dullness.



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Regular Expressions Example #2

Fill in the Blanks (FIB) Question

				Remove						
Blank # 1:	Size: 10 ▾ + Add Answer 1 Check Answers									
	<table border="1"><thead><tr><th>Answer</th><th>Weight (%)</th><th>Evaluation</th><th>Remove</th></tr></thead><tbody><tr><td>Gr[ae]y</td><td>50</td><td><input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression</td><td></td></tr></tbody></table>	Answer	Weight (%)	Evaluation	Remove	Gr[ae]y	50	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression		
Answer	Weight (%)	Evaluation	Remove							
Gr[ae]y	50	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression								
Text # 1:	<div> ▾ ...</div> <p>is a</p>									
Blank # 2:	Size: 10 ▾ + Add Answer 1 Check Answers									
	<table border="1"><thead><tr><th>Answer</th><th>Weight (%)</th><th>Evaluation</th><th>Remove</th></tr></thead><tbody><tr><td>colo?r*</td><td>50</td><td><input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression</td><td></td></tr></tbody></table>	Answer	Weight (%)	Evaluation	Remove	colo?r*	50	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression		
Answer	Weight (%)	Evaluation	Remove							
colo?r*	50	<input type="radio"/> Case Insensitive <input type="radio"/> Case Sensitive <input checked="" type="radio"/> Regular Expression								
Text # 2:	<div> ▾ Format ▾ ...</div> <p>of a neutral tone between black and white, and can also be used metaphorically to convey</p>									

Preview of Example #2

Fill in the Blanks (FIB) Question

Question 4 (5 points)



is a



of a neutral tone between
black and white, and can also be used metaphorically to convey gloom and dullness.



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Matching (MAT) Questions

- Learners choose from a set of possible match choices and correctly pair them with match items
 - Assess learners' recognition of information and demonstrate comprehension of specific relationships
- Can have more match choices than match items
- Match choices are **NOT** presented to learners in a random order
 - Enter match choices in a random order when creating quiz question



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Matching (MAT) Question

(continued)

Match Items

- ☐ deceptive signaling
- ☐ defensive driving
- ☐ deceleration lane
- ☐ depth perception
- ☐ dry steering

Match Choices

1. Expressway lane used to slow your vehicle without blocking vehicles behind you
2. A turn signal flashing when no turn or lane change is intended, or when the turn or lane change will be in the opposite direction from that indicated by the signal
3. Protecting yourself and others from dangerous and unexpected driving situations by using a space management system
4. Ability to judge distance between yourself and other objects
5. A road where no stopping is allowed at any time. The road sign is a red cross in a red circle on a blue background.
6. When traffic on a motorway follows signs to move to the opposite carriageway for a short distance because of roadworks.
7. Raised strips across the road near a roundabout or junction that change the sound the tires make and warn



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Ordering (ORD) Questions

- Arrange a series of items into a correct sequence or order



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Grading Options for Matching (MAT) and Ordering (ORD) Questions

- **Equally weighted**
 - Total point value is divided equally among all possible correct matches.
- **All or nothing**
 - Receive full points for the question only if they select all the correct answers and none of the incorrect answers.
- **Right minus wrong**
 - Receive points equal to number of right answers minus the number of incorrect answers they choose.



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Arithmetic (2+2) Questions

- Assess learners' knowledge and comprehension of mathematics and number theory
- Ensure each student receives a unique question by including variables enclosed with curly braces that randomly generate numbers within the problem
- Written Response (WR) question types are recommended for arithmetic problems that require users to demonstrate their calculations and show their work



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Arithmetic (2+2) Question Example

Question Text *

Rich text editor toolbar with icons for video, image, link, dropdown, Format, Bold (B), Italic (I), Underline (U), dropdown, bulleted list, numbered list, dropdown, Font Family, and more options (three dots).

Johnnie has {x} marbles, Sandy has {z} marbles, and {firstname} has {y} marbles, how many total marbles do they have?






Formula *

{x} + {y} + {z}

Variables

+ Add Variable

1

#	Name	Min	Max	Decimal Places	Step	Remove
1	<input type="text" value="x"/>	<input type="text" value="10"/>	<input type="text" value="75"/>	<input type="text" value="0"/> ▼	<input type="text" value="2"/>	
2	<input type="text" value="y"/>	<input type="text" value="5"/>	<input type="text" value="100"/>	<input type="text" value="0"/> ▼	<input type="text" value="3"/>	
3	<input type="text" value="z"/>	<input type="text" value="25"/>	<input type="text" value="150"/>	<input type="text" value="0"/> ▼	<input type="text" value="4"/>	



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Significant Figures (x10) Questions

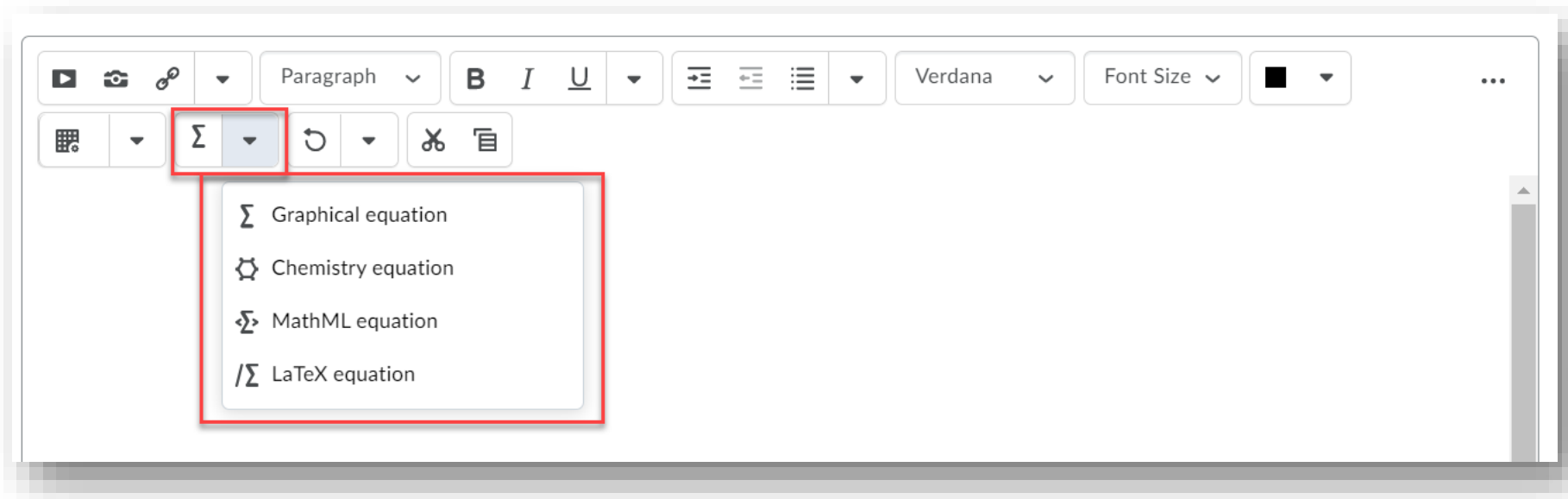
- Require respondents to answer in scientific notation and provide solutions that contain a specified number of significant figures
- Ensure each student receives a unique question by including variables enclosed with curly braces that randomly generate scientific notations within the problem



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Insert Equations in the HTML Editor

- Graphical equations
- Chemistry equations
- MathML equations
- LaTeX equations



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Question Library

- Central repository that stores and archives questions that you can share and reuse



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Why Use Question Library?

- Share questions between Quizzes, Surveys, and Self-Assessments Tools
- Allows for the use of the Random Sections
 - Randomly select questions from pre-determined set



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How many of the same questions are two students likely to get when drawn from a question pool?

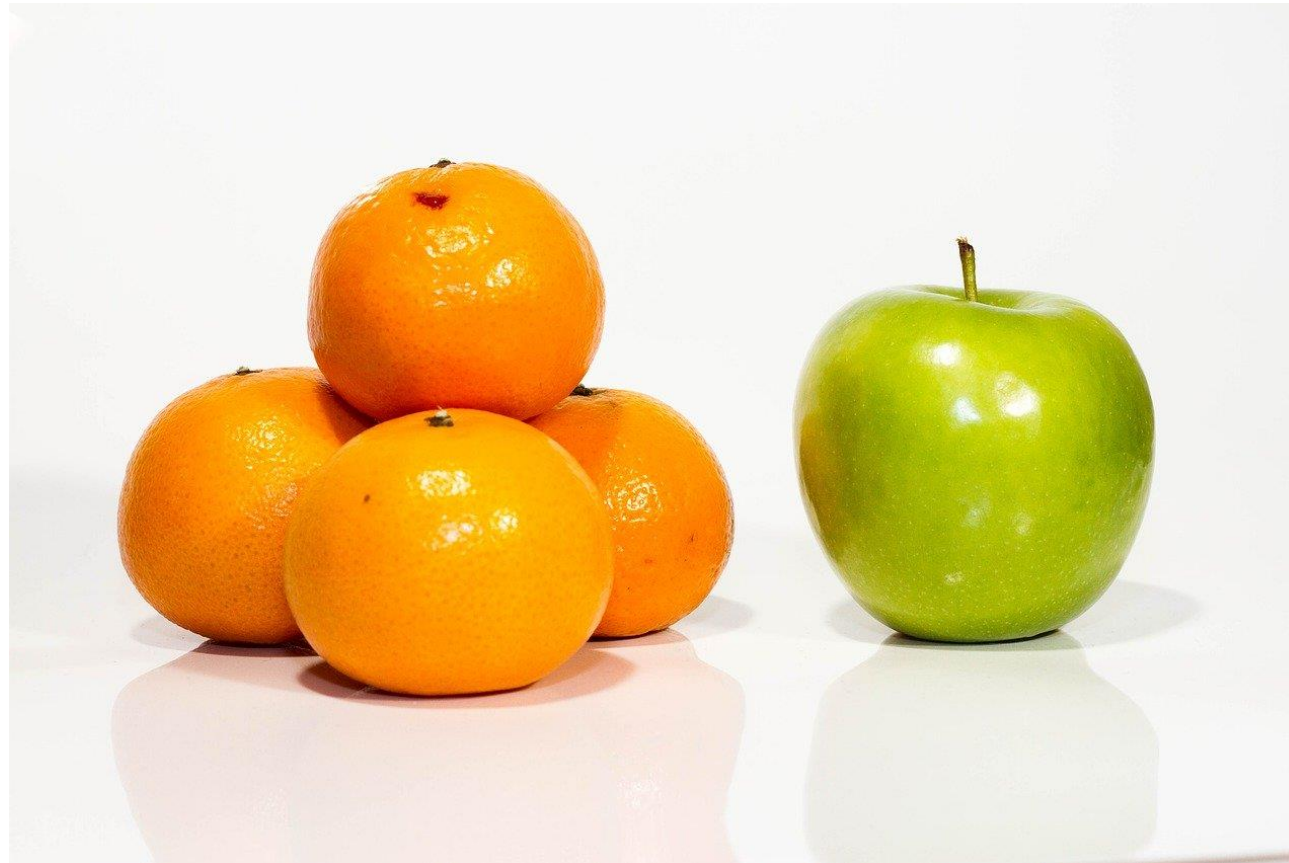


Image credit: [Image](#) by 3689161 from [Pixabay](#)



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Overlap in Questions from a Pool

Table 1. Example calculation of the overlap of two randomly chosen student tests.

Number of questions selected at random	Pool size	Average number of questions in common for two students
5	10	2.5
10	20	5.0
20	40	10.0
30	60	15.0
40	80	20.0
5	15	1.7
10	30	3.3
20	60	6.7
30	90	10.0
40	120	13.3
5	25	1.0
10	50	2.0
20	100	4.0
30	150	6.0
40	200	8.0




25%

11%

4%

“To give each student a different set of questions, the pool must be at least S times the size of the test, where S is number of students.”

Example of a Quiz with Random Questions

Add/Edit Questions		Edit Values						
Page Name			Type	Points	Diff	Bonus	Mandatory	
1	 Subsection (5 from 65)		-	10	-	-	-	
1	Q1. Random Question		RND	-	-	-	-	
2	Q2. Random Question		RND	-	-	-	-	
3	Q3. Random Question		RND	-	-	-	-	
4	Q4. Random Question		RND	-	-	-	-	
5	Q5. Random Question		RND	-	-	-	-	
6	 Subsection (3 from 6)		-	10	-	-	-	
6	Q6. Random Question		RND	-	-	-	-	
7	Q7. Random Question		RND	-	-	-	-	
8	Q8. Random Question		RND	-	-	-	-	
9	 Subsection 3 (2 from 28)		-	10	-	-	-	
9	Q9. Random Question		RND	-	-	-	-	
10	Q10. Random Question		RND	-	-	-	-	
			Total	100				



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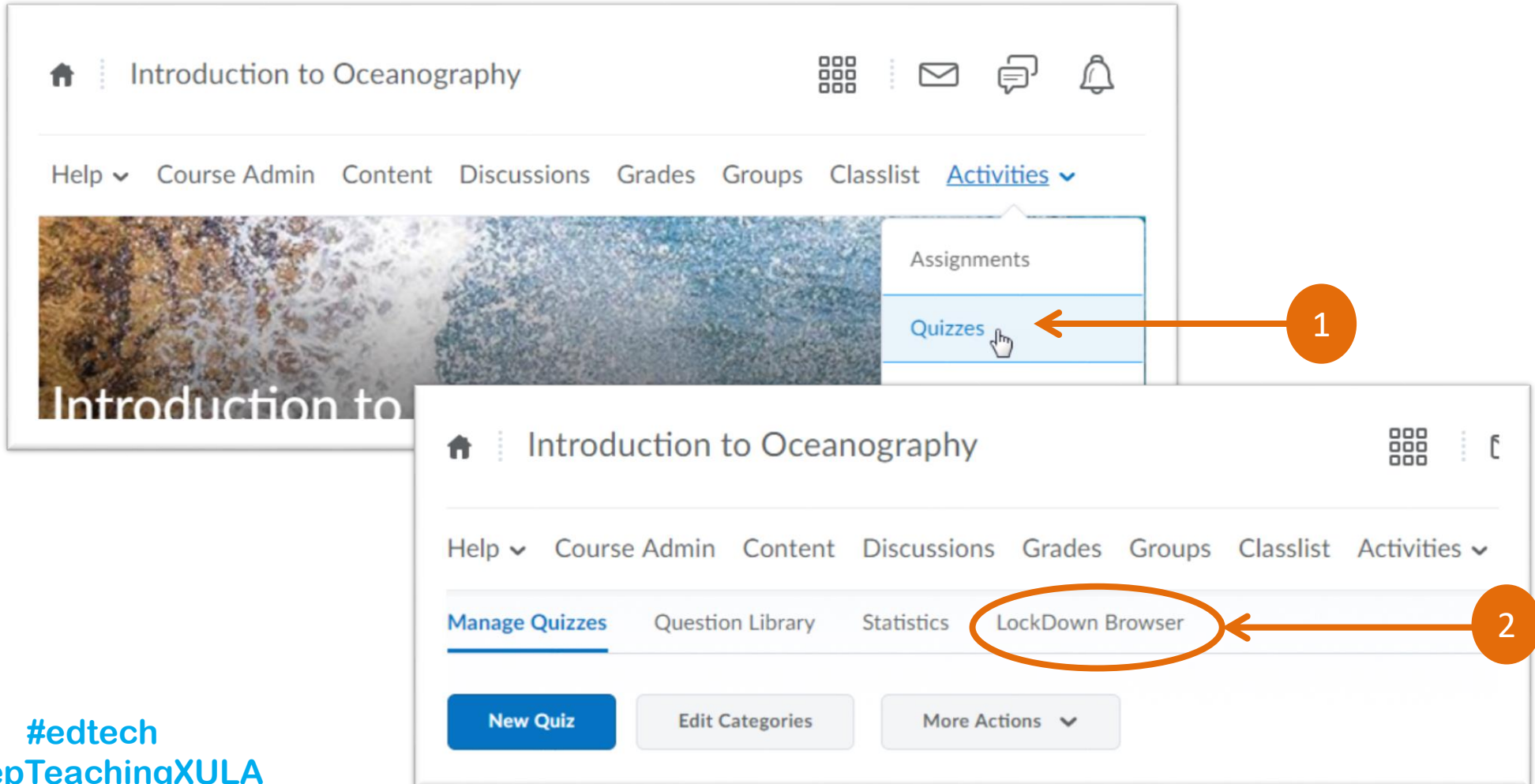
Discourage Cheating

- Set optional advanced properties for the test
 - Disable right click
 - Disable Instant Messages and alerts
- Use Question Pools
- Respondus LockDown Browser and Respondus Monitor



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Respondus LockDown Browser/Respondus Monitor



The image displays two screenshots of the Brightspace user interface for a course titled "Introduction to Oceanography".

The top screenshot shows the main navigation bar with the "Activities" dropdown menu open. The "Quizzes" option is highlighted, and an orange arrow labeled "1" points to it.

The bottom screenshot shows the "Manage Quizzes" page. The "LockDown Browser" link is circled in orange, and an orange arrow labeled "2" points to it.

Below the "LockDown Browser" link, there are three buttons: "New Quiz", "Edit Categories", and "More Actions".



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In Breakout Rooms

- In small groups you will answer the following question:
 - **What is the most effective way you can convert complex questions from one of your exams into a format that will work best in Brightspace?**
- The group member attending today's session from a location that is closest to Xavier will be the spokesperson for the group.



Effective Practices for Quizzes

- Build a standard quiz template
 - Template has your default options
 - Create new quizzes by making a copy of quiz template
- Create questions in the Question Library
 - Organize questions by type and topic
 - Makes it easier to find questions
 - Reuse questions in multiple assessments
 - Generate random sections of questions



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Feedback

- Provide feedback on questions, especially if the test is being used as a formative assessment
- Feedback type
 - Continuous or Summative
 - Consider the length of the test, the complexity of the feedback, and the types of questions being asked
- Feedback should be clear and explicitly describe why that is the correct and/or incorrect answer



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Example of a Multiple Choice Question with Feedback

Multiple Choice Options

Question Text *

Tom, a shareholder, holds 200 shares of common stock of Q Corp. with a basis of \$24 per share, or a total basis of \$4,800. Q pays a 20% stock dividend (40 shares) that is nontaxable. What is Tom's new basis per share in the stock dividend?

Answers *

☐ \$0

It does not follow that, because a stock dividend is nontaxable, such stock should have no basis.

☒ \$20

If a nontaxable stock dividend is paid in shares similar to the underlying stock, the allocation is done by simply dividing the basis of the original stock by the total number of shares (old shares plus those received as a dividend). Tom's basis per share is \$24. The new basis per share is \$20.

☐ \$24

You calculated Tom's basis per share before the dividend. Calculation of the new basis must consider the stock dividend.

☐ \$48



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Submission Views

- Submission Views determine what students see when viewing a completed quiz
- By default, the Submission View only shows students their score on the quiz
- Instructors can use the limited Default View during the testing period and give students a more complete view and feedback once the testing period is over
- Provide students with link to instructions on how to view a completed test submission



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Better Practices for Quizzes

- Preview all questions you create and all imported questions
- If you use text or image information be sure they are on the same page as your questions
- If you decide to randomize **questions** be sure all students get a quiz that is equally difficult (e.g., group questions by difficulty into sections)
- If you decide to randomize **answers** be sure all answers are suitable for randomizing (e.g., NOT “all the above”)



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Better Practices for Quizzes (continued)

- Be transparent in the test instructions regarding grading options for the questions
 - E.g., “All or nothing”, “Right minus wrong”, “Correct answers”
- Use Special Access to address the requirements of learners with special needs
- Review Quiz Stats to identify problematic questions and next steps



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Better Practices for Quizzes (continued)

- Require students to take a practice test before taking their first online test
 - Practice test should simulate the actual test
 - Use same question types and testing restrictions that the actual test will have
 - Unlimited attempts
 - Available throughout the semester



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Workshop evaluation



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