

NCEA LEVEL 2 MATHEMATICS SIM

TEACHER BRIEFING

Background Information

Objectives

This is a simulation designed for a class of mathematics students. Each student runs the simulation and attempts the questions. The main goal is to allow the students to understand the underlying principles of the mathematical problems.

Main Learning Objectives

Students will learn how to:

- Identify the slope and y – intercept of a straight line.
- Calculate the coordinate of interception of two straight lines, by solving simultaneous equations.
- Solving simultaneous equations in fraction form.
- Solving quadratics.
- Calculating x and y – intercept of factorisable polynomials.
- Solving simple log equations.

Components of the Sim

The simulation consists of the following components:

- The teacher briefing (approx 4 pages)
- A solo simulation that can be played against the computer
- PDF help files that student can access whenever they need them.

Size of classes

- Any size is fine.

Usage suggestions

Either as homework practice or in normal lab session.

Small Restaurant Simulation

Measures of Learning

The key measures of learning are listed below:

- Score on the net sim
- Teachers are able to check the distribution of each question.

Enter the answers you have calculated:

		x	y
Question 4 What is the coordinate of the intercept of the two lines $(x + 7) / 10 = 0$ and $(x - 7) / 5 = 0$?		Your Intercept	21 2.8
		Correct Intercept	
<input type="button" value="New Question"/> <input type="button" value="Answer"/>		Step 1	
		Step 2	
		Step 3	
		Step 4	

After pressing the ANSWER button:

		x	y
Question 4 What is the coordinate of the intercept of the two lines $(x + 7) / 10 = 0$ and $(x - 7) / 5 = 0$?		Your Intercept	21 2.8 Correct
		Correct Intercept	21 2.8
<input type="button" value="New Question"/> <input type="button" value="Answer"/>		Step 1	$(x + 7) / 10 = (x - 7) / 5$
		Step 2	$5x + 35 = 10x - 70$
		Step 3	$-5x = -105$
		Step 4	$x = -105 / -5$

Or if the student was wrong:

		x	y
Question 4 What is the coordinate of the intercept of the two lines $(x + 7) / 10 = 0$ and $(x - 7) / 5 = 0$?		Your Intercept	100 50 WRONG
		Correct Intercept	21 2.8
<input type="button" value="New Question"/> <input type="button" value="Answer"/>		Step 1	$(x + 7) / 10 = (x - 7) / 5$
		Step 2	$5x + 35 = 10x - 70$
		Step 3	$-5x = -105$
		Step 4	$x = -105 / -5$