



Dear Student,

We at Design a Math App Central are contacting you with a great opportunity. In recent years the market for educational Apps has exploded. We realize this and also realize that there is still a lack of great mathematics applications that are designed from a student point of view. We invite you to explore the various mathematics applications that already exist for iPads, the Chrome Store, and Windows and then submit to us your idea for an app to review Solving Equations and Inequalities.

A good math app needs to provide an interesting and engaging scenario to students. This means you need a good story line full with pit falls and rewards. You will also need to demonstrate the types of problems that will be solved along the journey through your app. All good review apps give details on how to solve the various problems that the app reviews. Another characteristic of a good app is that they have a great help section for players that just need a hint.

We look forward to reading your presentation for a mathematical application that reviews Solving Equations and Inequalities. Please submit your proposal using Power Point, Google Presentations, Prezi, Sway, or another format approved by the teacher. Below we have outlined the requirements for each slide of your presentation.

Thank you for your future proposal,



Design a Math App Central - App Team

Requirements

Requirements for your slides:

1. **Title** - Create a catchy title for your new App

2. **The Scenario** – Please write about the premise of your math app.

Include information on the following:

- How is the game played?
- What pit falls happen when a person gets an answer wrong?
- What happens when a person gets an answer right?
- What is the goal of this game?
- Are there points involved?
- What else does your game have that makes it exciting and engaging for players
- Please include any other information your feel will help us in our decision to create your proposed game

3. **5 Problems** – Include 5 problems that a player will come across in your game

- Include 5 different types of problems that a player will see in your game that review the various concepts included in reviewing solving two-step and multi-step equations and solving and graphing inequalities. **(Please choose one problem from each section on the handout provided)**
- Show all of the work required to solve the problems done out step by step. If it's an inequality be sure to graph the solution on a number line.
- Give the correct answers to your problems.

4. **Help Section** – all good games have a help section

- Explain in words how to solve the problems you have submitted. Sometimes just seeing the steps isn't enough. (you may write your explanation for each problem on the same slide as your work)
- What hints can you provide to help a player come to the solution for problems with a similar make-up?
- What vocabulary might be necessary to know in order to succeed in your game?

5. **App Logo** –Submit your App logo. This will give you a bonus in your submission.



Due Date: _____

Problems to choose from:

Section 1 (2-Step equations)

1.) $6m + 1 = -23$ 2.) $15 - \frac{1}{2}b = 47$ 3.) $7.50 + 2.5p = 12.5$

Section 2 (2-step equations in the form $p(x+q)=r$)

1.) $12(x - 20) = -48$ 2.) $\frac{5}{9}(8 + c) = -20$ 3.) $1\frac{3}{5}(t - 6) = -0.4$

Section 3 (Graph Inequalities-Make sure you provide your own number line to graph solution)

1.) $x \leq -3$ 2.) $x > 5$ 3.) $x \geq 0$

Section 4 (Solving 1-step Inequalities & graphing solution -Make sure you provide your own number line to graph solution)

1.) $1.2 + m \leq 5.5$ 2.) $-10n > -20$ 3.) $-8 < \frac{y}{5}$

Section 5 (Solving 2-step Inequalities & graphing solution -Make sure you provide your own number line to graph solution)

1.) $3x + 4 < 34$ 2.) $-20 > -2x + 4$ 3.) $\frac{x}{13} + 3 \geq 4$

Remember choose one from each section!

Sample Slide

SOLVING A MULTI-STEP EQUATION

Example Problem: $2(x - 5) = 4x - 2(x + 5)$

$$\begin{aligned} 2(x) - (5)(2) &= (-2)(x) + (-2)(5) \\ 2x - 10 &= 4x - 2x - 10 \\ & \quad 4x - 2x \\ 2x - 10 &= 2x - 10 \\ -2x & \quad -2x \\ -10 &= -10 \end{aligned}$$

To solve this problem you must first distribute the number outside the parenthesis to each item in the parenthesis. You multiply the number outside to each number inside to distribute. Once you have distributed, you should combine like terms on the same side of the equals sign. When there are no other like things on the same side you need to add or subtract to move the variable to one side and the constants to the other. In this case the variable eliminates leaving a true statement. Therefore, the solution to this problem is all real numbers.

HINTS

Solving Order

1. Distribute
2. Other Grouping Symbols
3. Combine Like Terms on the same side of the equation.
4. Add or subtract to move variables with other variables and constants with other constants.
5. Multiply and Divide to isolate the variable

Possible Solutions

1 Solution, No Solutions, and All real numbers