PHOTOMATH – A MOBILE APP FOR ALGEBRA TEACHING AND TUTORIALS

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Abstract

Increasingly, mobile apps play important roles in teaching and learning. From greater student engagement to an expansion of the learning environment beyond normal classroom hours, mobile apps can open new educational doors. Mobile apps interface with students' social networks to keep them connected and engaged with classmates, counselors, and instructors, keeps parents informed and engaged in their children's education, and provides instructors and administrators with early and instant alert systems for academic operations and curriculum revisions. In this paper, an artificial intelligent app – PhotoMath – that serves the goal of virtual teaching and tutoring algebra will be introduced.

Introduction

PhotoMath is a free mobile app. It runs on iOS and Android devices. As a smart camera calculator, PhotoMath uses optical character recognition technique to read mathematics problems. By pointing the phone's camera toward a math problem, the app then solves the captured function and displays the final result. With a single tap, the user can obtain the worked out, step-by-step solution.

The intuitive design of "snaps it, solves it, and shows how to do it" makes PhotoMath a convenient and intelligent mathematical tutorials that is approachable by both students and their parents. The app alleviates the tension of learning how to use technology component while allowing for greater focus of algebraic solving skills and strategies.

PhotoMath as an Algebraic Tutorial

Although it is not as powerful as Wolfram math software, PhotoMath provides students with answers for mathematical function symbolically and numerically. With the ability to display step-by-step solutions to certain mathematical functions, PhotoMath serves the goal of teaching and

tutoring mathematics rather than just the number crunching. 93% of pre-calculus students who were taking the survey indicated that this mobile app "makes their lives easier."

Followings are some illustrations of how PhotoMath captures mathematics problems, displays final results, and shows how to solve the problems.

- Figure 1: PhotoMath snapped a linear equation from a computer screen and displayed the solution.
- Figure 2: With a tap to the forwarding arrow, PhotoMath showed the solving steps of how to obtain the solution.

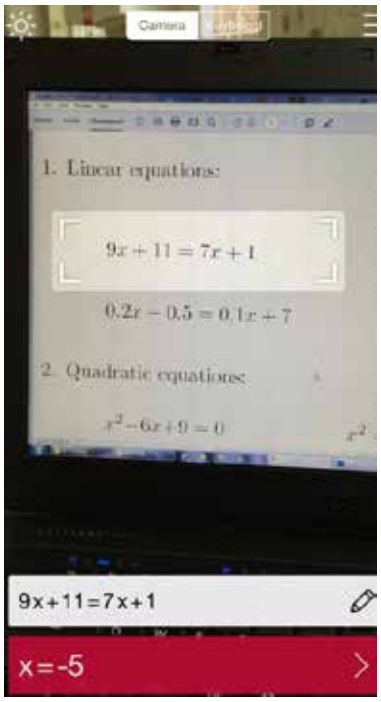

Figure 1

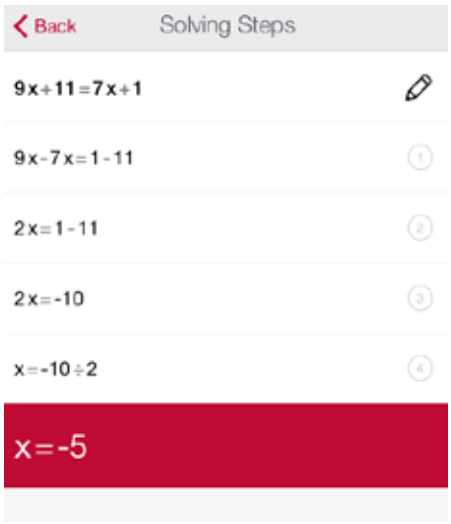

Figure 2

- Figure 3: PhotoMath snapped a quadratic equation from a computer screen and displayed the solution.
- Figure 4: PhotoMath keyboard could be used to type an equation and displayed the solution.

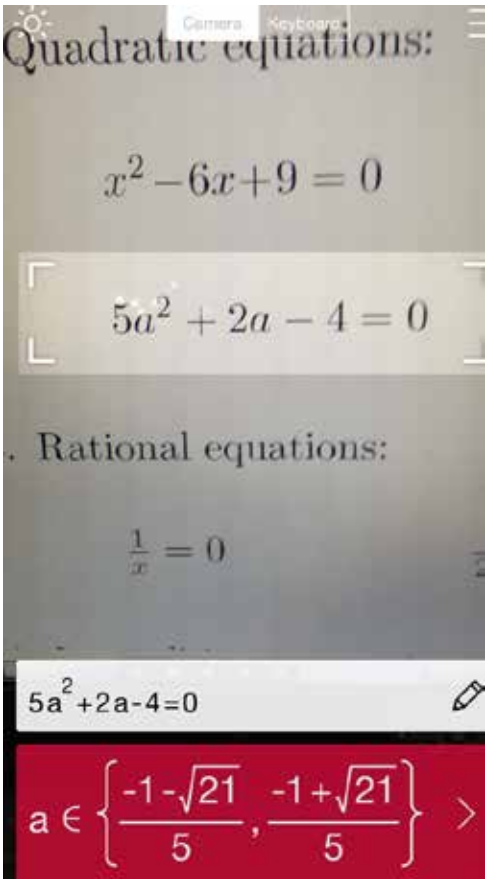

Figure 3

Figure 4

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