

Study Buddy

Study Smarter

• • •

Aaron McGhie - Manager
Egan Anderson - Market Research
Jordan Davis - Product Testing
Jake Osterloh - Designer

Problem

My future depends on this test!!

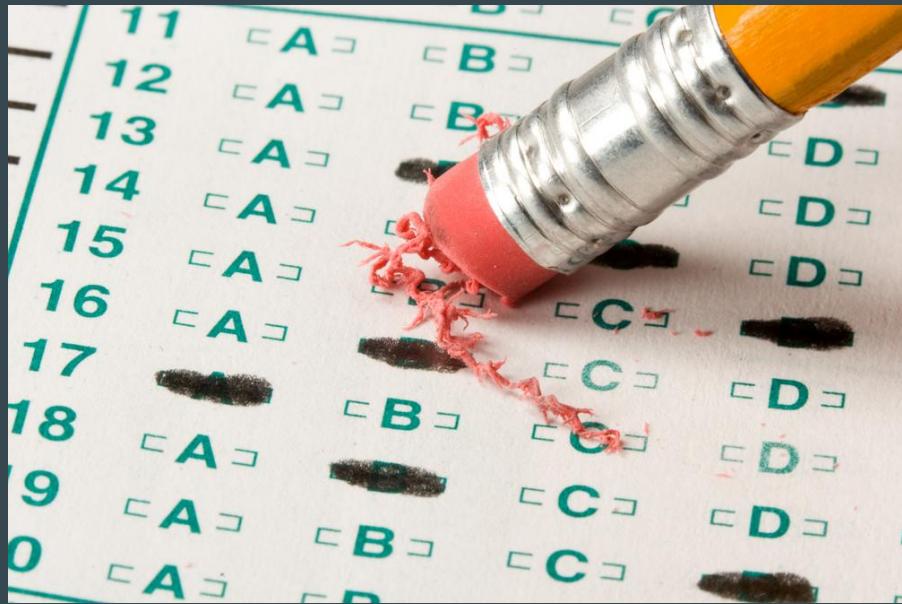
What should I study?

I know the material, I'm just bad at taking tests!

Somebody please help me!!

I need a miracle!!

- No you just need Study Buddy!



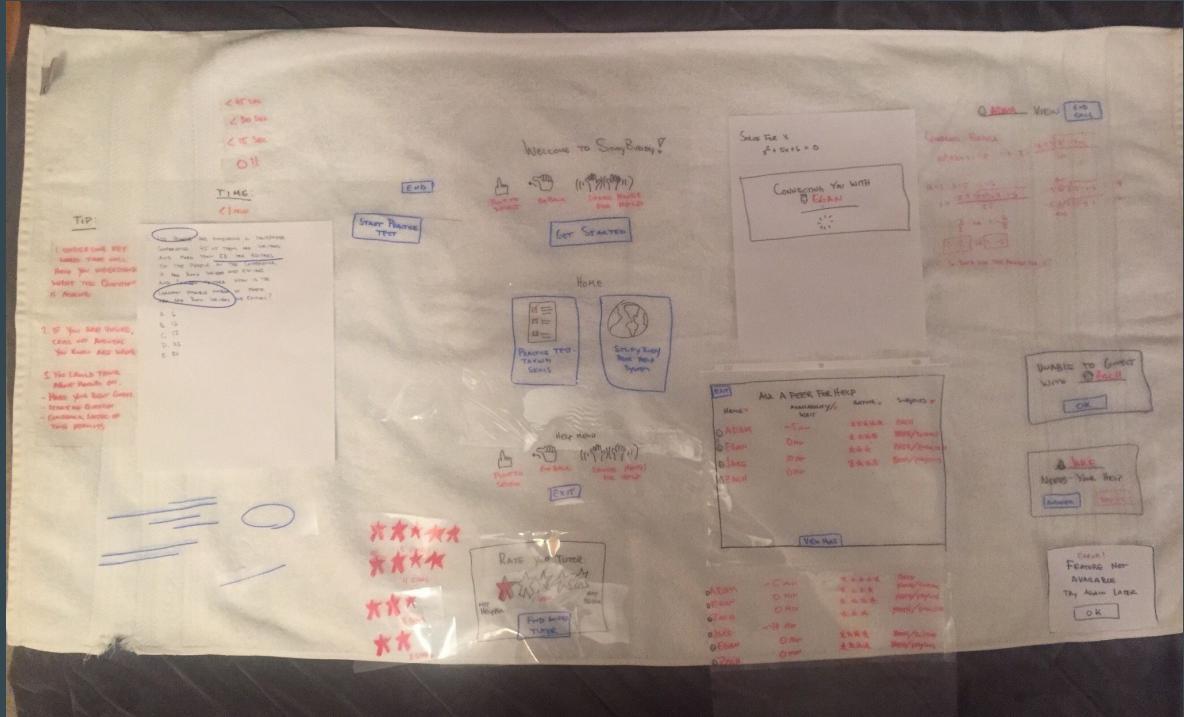
Initial Paper Prototype

Overview

AR Glasses

Transparent Sheets
represent AR

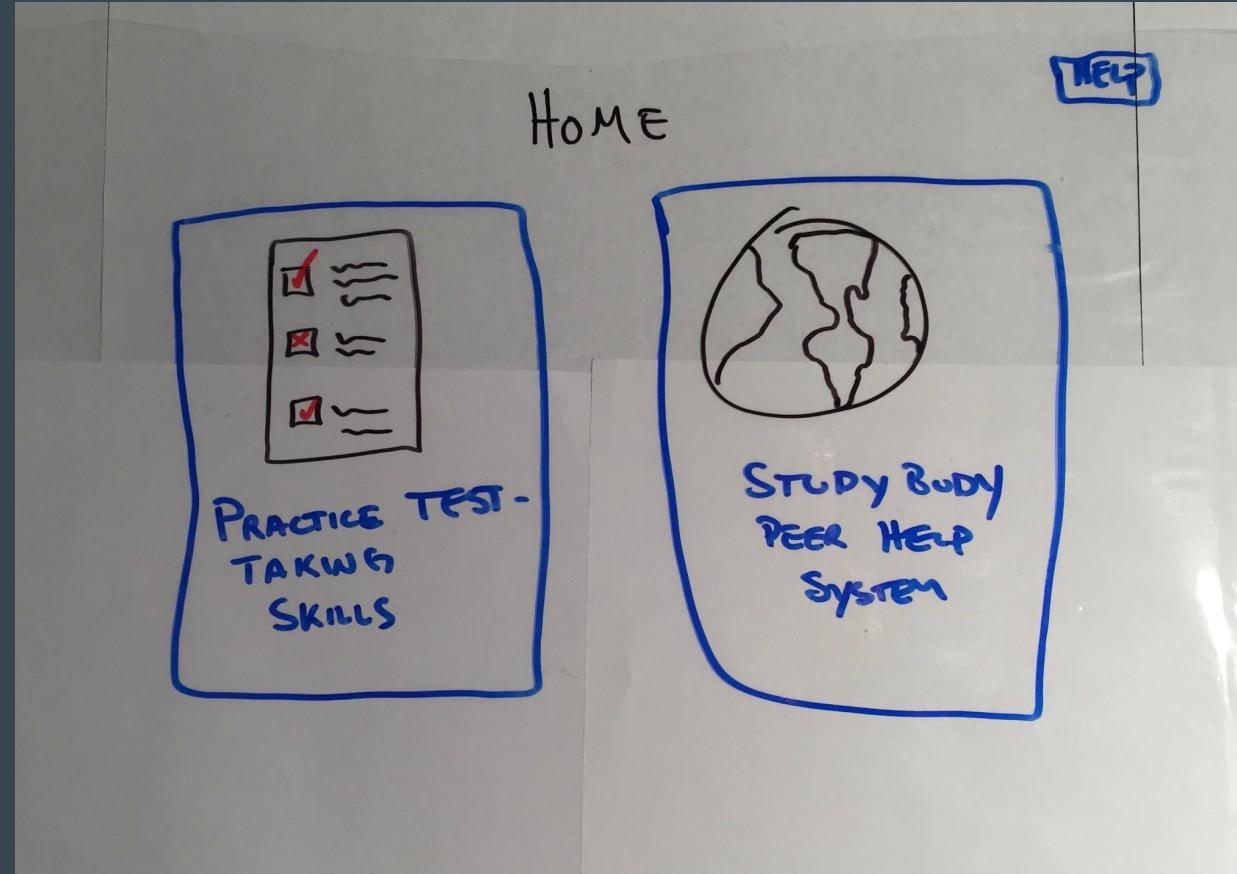
Glasses analyze users
test / study material



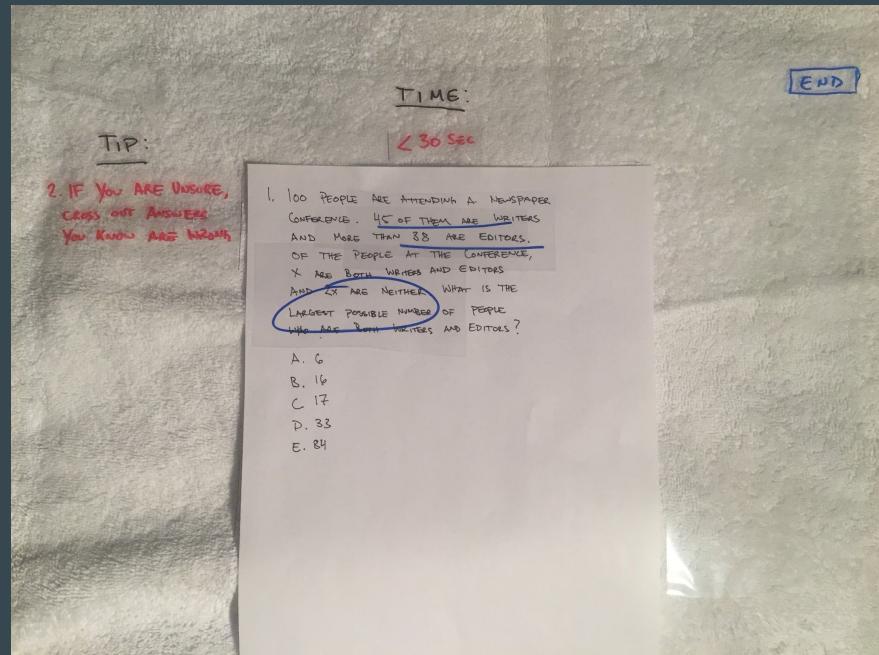
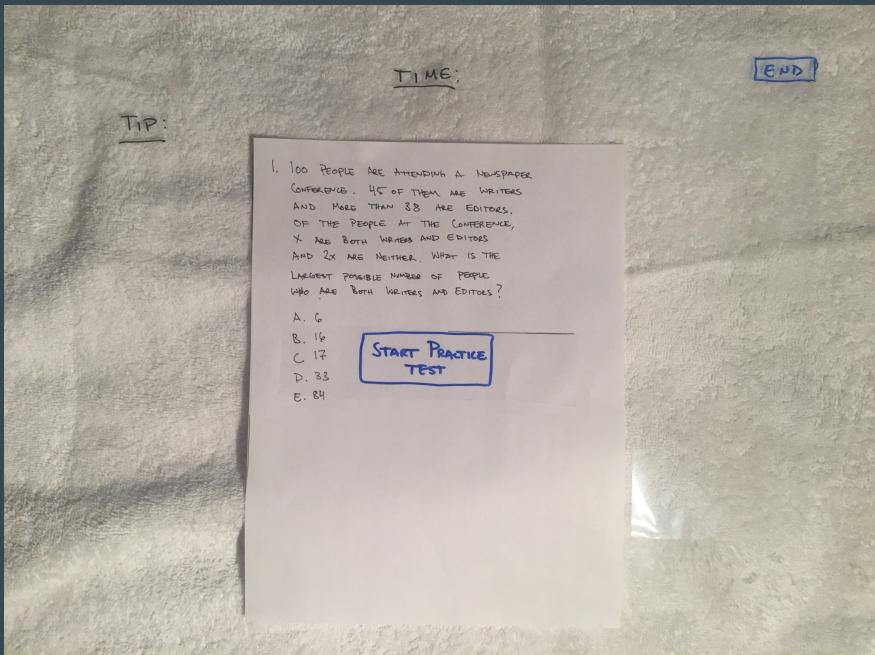
Tasks

Test Taking Tips

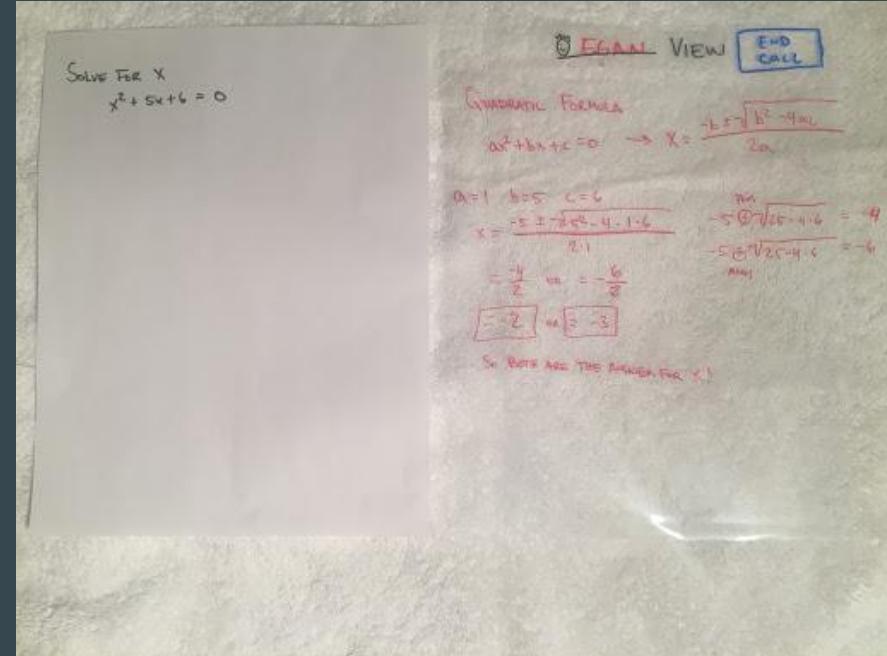
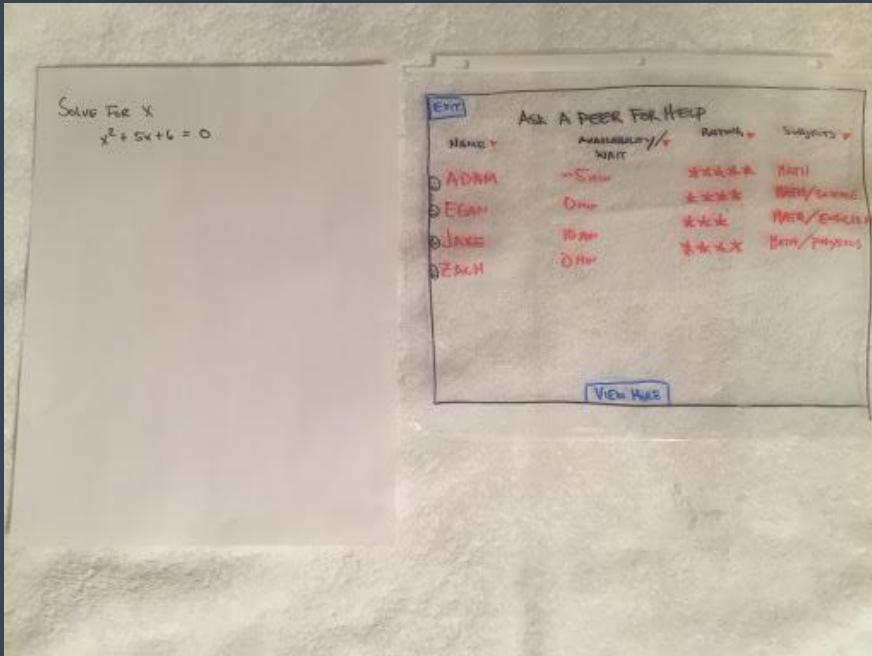
Peer Help System



Task 1 - Test Taking Tips



Task 2 - Peer Help System



Testing Process



Laura

Bad at math

Preparing to take the GRE
for the first time



Spencer

CS Student

AR Experience



Boris

Medical Assistant

Taking a MCAT prep course

Previous CI Participant

Testing Results

- Users didn't know they needed their own practice test.
- Little or no interaction with tips section.
- Some users found hints more distracting than helpful.
- Home screen was interruptive to study flow.
- Users failed to use the 'help' gesture properly.

Improvements made

- Supplied a screen that informs Users to present their test.
- Removed in test tips and provide a test analysis.
- Simplified home screen and added overlay menu.
- Removed Gestures because they were unnecessary and confusing.

Final Paper Prototype

WELCOME TO
STUDY BUDDY

My
POINT
TO
SELECT

GET STARTED

SOLVE FOR X

$$x^2 + 5x + 6 = 0$$

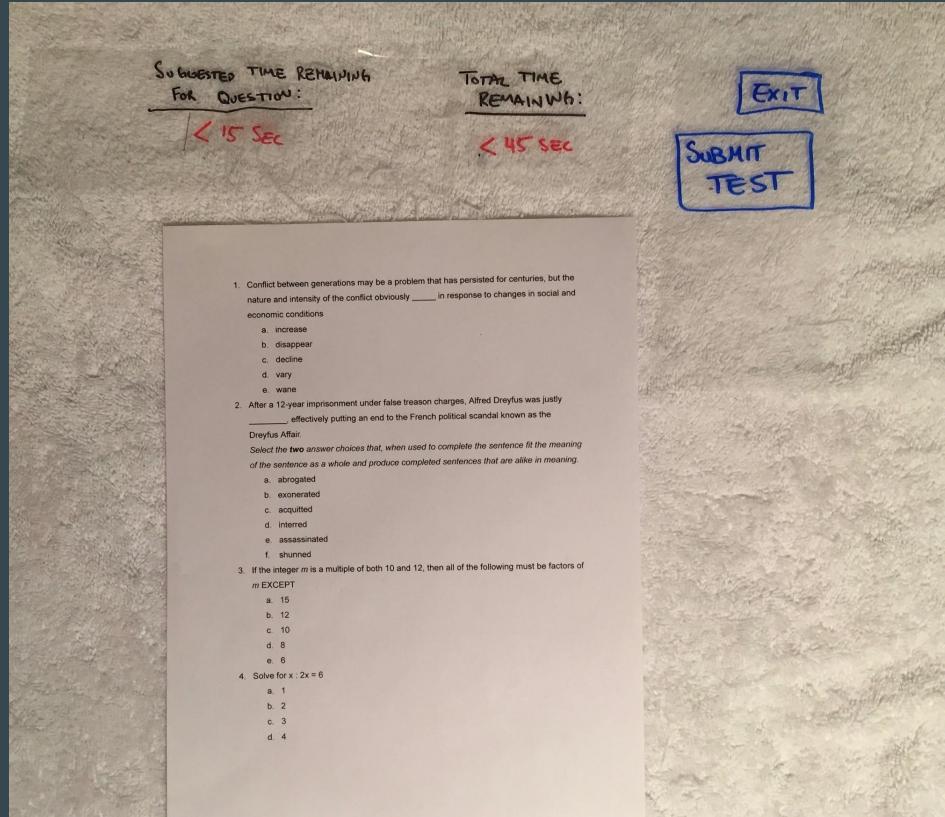
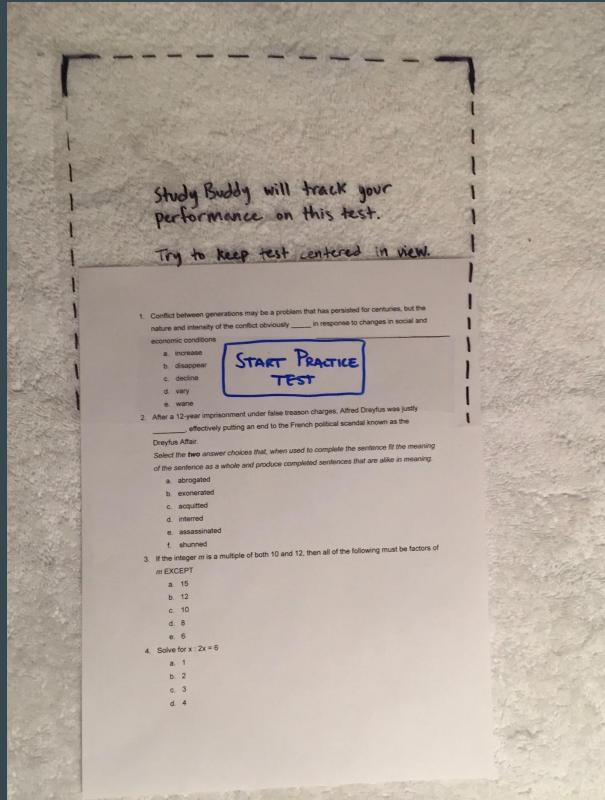
MENU

PRACTICE TEST

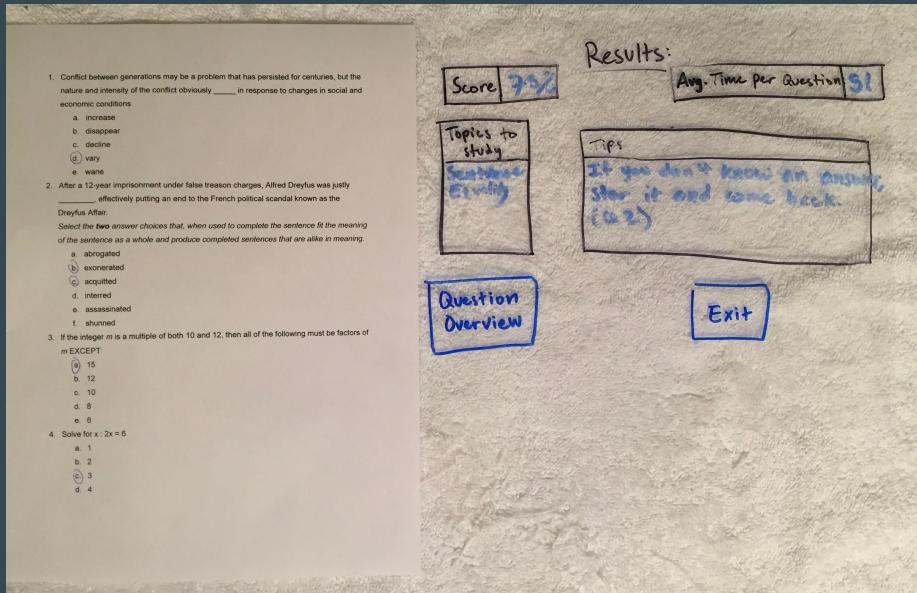
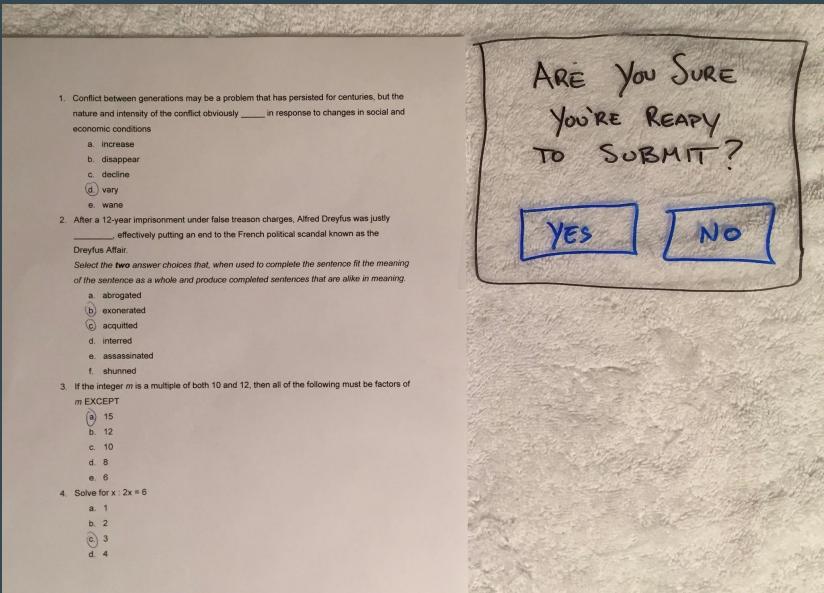
TUTOR SESSION

SETTINGS

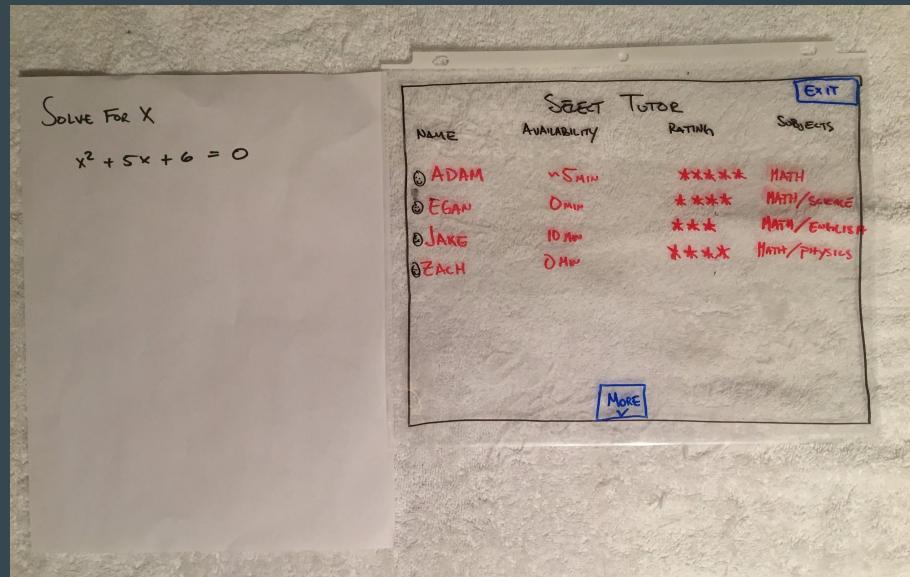
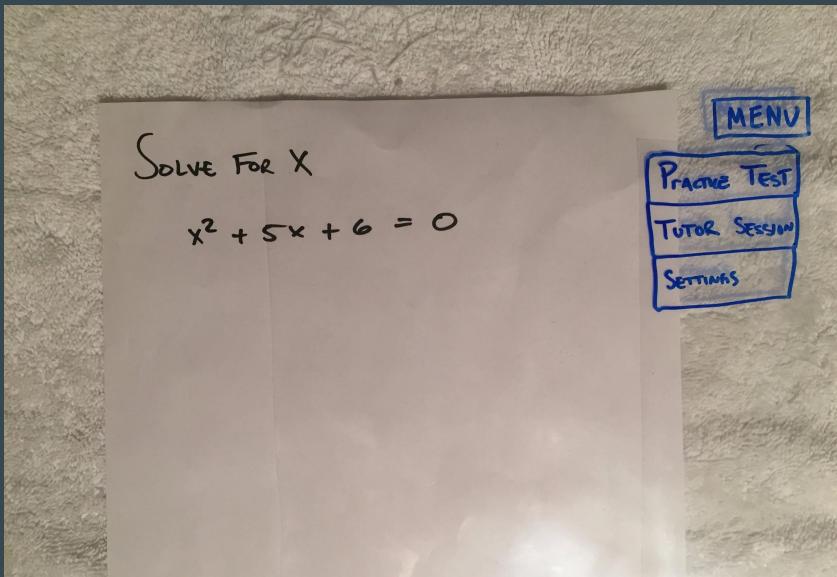
Task 1 - Test Taking Tips



Task 1 - Test Taking Tips



Task 2 - Peer Help System



Task 2 - Peer Help System

SOLVE FOR X

$$x^2 + 5x + 6 = 0$$

$$a=1 \quad b=5 \quad c=6$$

$$x = \frac{-5 + \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1} = \frac{-5 + \sqrt{25 - 24}}{2} = \frac{-5 + \sqrt{1}}{2} = \frac{-5 + 1}{2} = \frac{-4}{2} = -2$$

$$x = \frac{-5 - \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1} = \frac{-5 - \sqrt{25 - 24}}{2} = \frac{-5 - \sqrt{1}}{2} = \frac{-5 - 1}{2} = \frac{-6}{2} = -3$$

$$\boxed{x = -2 \text{ or } -3}$$

EGAN VIEW END CALL

QUADRATIC FORMULA

$$ax^2 + bx + c = 0 \rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$a=1 \quad b=5 \quad c=6$$

$$x = \frac{-5 \pm \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1}$$

$$= \frac{-5 \pm \sqrt{25 - 24}}{2} = \frac{-5 \pm \sqrt{1}}{2}$$

$$= \frac{-5 \pm 1}{2}$$

$$\boxed{-2} \text{ or } \boxed{-3}$$

So BOTH ARE THE ANSWER FOR X!

SOLVE FOR X

$$x^2 + 5x + 6 = 0$$

$$a=1 \quad b=5 \quad c=6$$

$$x = \frac{-5 + \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1} = \frac{-5 + \sqrt{25 - 24}}{2} = \frac{-5 + \sqrt{1}}{2} = \frac{-5 + 1}{2} = \frac{-4}{2} = -2$$

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$$\boxed{x = -2 \text{ or } -3}$$

RATE YOUR TUTOR



Digital Mockup

- 111 of 112

studyBu

Select the two authors (Candy and Duf) whose names fit best into the first part of the sentence and produce completed sentences that are able to continue the story.

- 200



point
to select

3. If the integer m is a factor of each of the integers $100, 120, 150, 180$, then m must be a factor of:

Get Started

- 34

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict obviously _____ in response to changes in social and economic conditions.
- a. increase
 - b. disappear
 - c. decline
 - d. vary
 - e. wane
2. After a 12-year imprisonment under false treason charges, Alfred Dreyfus was justly _____, effectively putting an end to the French political scandal known as the Dreyfus Affair.
- Select the two answer choices that, when used to complete the sentence fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.
- a. abrogated
 - b. exonerated
 - c. assuaged
 - d. interred
 - e. assassinated
 - f. shunned
3. If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m EXCEPT
- a. 15
 - b. 12
 - c. 10
 - d. 8
 - e. 6
4. Solve for x : $2x = 8$
- a. 1
 - b. 2
 - c. 3
 - d. 4

Menu

Practice Test

Tutor Session

Settings

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict obviously _____ in response to changes in social and economic conditions.
 - a. increase
 - b. disappear
 - c. decline
 - d. vary
 - e. vague
2. After a 12-year imprisonment under false treason charges, Alfred Dreyfus was finally _____, effectively putting an end to the French political scandal known as the Dreyfus Affair.
Select the two answer choices that, when used to complete the sentence fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.
 - a. exonerated
 - b. exonerated
 - c. acquitted
 - d. interred
 - e. assassinated
 - f. stunned
3. If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m EXCEPT
 - a. 15
 - b. 12
 - c. 10
 - d. 8
 - e. 6
4. Solve for x : $2x = 6$
 - a. 1
 - b. 2
 - c. 3
 - d. 4

Task 1 - Test Taking Tips

Exit

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict usually _____ in response to changes in social and political structures.
a. increases
b. decreases
c. disappears
d. declines

2. After a 12-year imprisonment under false charges, Alfred Dreyfus was finally _____, which was a major victory for the French government.
a. condemned
b. acquited
c. arrested
d. released

3. Select two answer choices that, when combined, are necessary for the meaning of the sentence. A 10-year prison sentence is selected sentences that are able to change.
a. learned
b. acquired
c. inherited
d. assimilated
e. learned

4. If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m , EXCEPT
a. 10
b. 12
c. 1
d. 2
e. 3
f. 4

Start Practice Test

Suggested time
remaining for question:

0:17

Total time
remaining: 2:12

Exit

Submit

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict obviously _____ in response to changes in social and economic conditions.
 - a. increase
 - b. disappear
 - c. decline
 - d. vary
 - e. wane
2. After a 12 year imprisonment under false treason charges, Alfred Dreyfus was justly _____, effectively putting an end to the French political scandal known as the Dreyfus Affair.
Select the two answer choices that, when used to complete the sentence fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.
 - a. exonerated
 - b. exonerated
 - c. acquitted
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 - f. shunned
3. If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m EXCEPT
 - a. 15
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4. Solve for x : $2x = 6$
 - a. 1
 - b. 2
 - c. 3
 - d. 4

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict obviously _____ in response to changes in social and economic conditions.

- a. increase
- b. disappear
- c. decline
- d. stay the same

2. After a 12 year imprisonment under false charges, Ahmed Shukeir was partly

Select the best option to answer the following question. If the question does not have a best answer, choose the one that is most appropriate.
Select the best option to answer the following question. If the question does not have a best answer, choose the one that is most appropriate.

- a. annoyed
- b. irritated
- c. annoyed
- d. irritated

Are you sure you want to submit?

Submit

Cancel

a. 10

b. 12

c. -10

d. 8

e. 0

4. Solve for x: $2x = 6$

a. 1

b. 2

c. 3

d. 4

Exit

Results

Score: 75%

Avg. time per question: 0:51

Topics that
need review:

Sentence Equality

Algebra

Problem Solving

Tips:

If you don't know an answer,
star it and come back.

Determine as quickly as
possible if you want to skip.

Question Overview

Question Overview

Question: 1

Time: 1:08
(a little too slow)

Topic: Algebra

Correct Answer: A

Status: Correct

Tips: It can be overwhelming to have 5 answers to choose from. Try to cross out unlikely options to narrow the possibilities.

Exit

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 - c. 3
 - d. 4

Task 2 - Peer Help System

Exit

1. Conflict between generations may be a problem that has persisted for centuries, but the nature and intensity of the conflict obviously _____ in response to changes in social and economic conditions.

a. increased

b. decreased

c. remained

d. increased and decreased simultaneously

e. remained stable

2. After a long period of relative peace, the French army _____, effectively putting an end to the French method of warfare known as the

Overland Attack

Select the best answer choice that, when used in place of the underlined word, fits the meaning of the sentence. If you are not sure, choose the answer that is closest to the meaning of the sentence.

a. interrogated

b. surrendered

c. retreated

d. invaded

e. retreated

3. If one integer n is a multiple of both 70 and 72, then all of the following must be factors of n .

EXCEPT

Quantitative Reasoning

a. 12

b. 8

c. 7

4. Solve for x : $2x = 6$

a. 1

b. 2

c. 3

d. 4

Exit

Select Tutor

Name

Rating ▼

Availability ▼

James



Now

Adam



Now

Egan



5 min

Zach



10 min

More ▼

Egan's
Notes

End Call

Given $Ax^2 + Bx + C = Q$ solve for x

Egan's Notes

End Call

- Need to know how to factor polynomials
- Only works when you can factor - otherwise use quadratic formula
- Based on zero-product property

Example $x^2 - 9x + 8 = 0$ ← Factor first
 $(x-1)(x-8) = 0$

ZERO PRODUCT PROPERTY } One of these terms must be zero, because that's the only way you can make the equation (left side) equal to zero (right side)

Solve by setting both factors equal to zero

$$\begin{aligned}x-1 &= 0 & x-8 &= 0 \\x &= 1 & x &= 8 \quad \leftarrow \text{solutions}\end{aligned}$$

Egan's Notes

End Call

Given $Ax^2 + Bx + C = 0$ solve for x

$$\text{① } \left(x\sqrt{A} + \frac{B}{2\sqrt{A}}\right)^2 = \left(Ax + Bx + \frac{B^2}{4A}\right)$$

so

$$\text{② } \left(x\sqrt{A} + \frac{B}{2\sqrt{A}}\right)^2 - \frac{B^2}{4A} + C = 0$$

$$\left(x\sqrt{A} + \frac{B}{2\sqrt{A}}\right)^2 = \left(\frac{B^2}{4A} - C\right)$$

Proof

$$\text{③ } \left(x\sqrt{A} + \frac{B}{2\sqrt{A}}\right) = \pm \sqrt{\frac{B^2 - 4AC}{4A}}$$

— should have gone ↓

$$\left(\text{" } \downarrow \text{ " } \right) = \frac{\pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$\left(\frac{2\sqrt{A}x + \frac{B}{2\sqrt{A}}}{2}\right) = \frac{\pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$\frac{2\sqrt{A}x + \frac{B}{2\sqrt{A}}}{2} = \frac{\pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$\frac{2\sqrt{A}x}{2} = \frac{-B \pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$2\sqrt{A}x = -B \pm \sqrt{B^2 - 4AC}$$

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

$$\frac{-B \pm \sqrt{B^2 - 4AC}}{2\sqrt{A}} = x\sqrt{A}$$

$$\left[\frac{-B \pm \sqrt{B^2 - 4AC}}{2A} = x \right]$$

Two long, I missed something.

Given $Ax^2 + Bx + C = 0$ solve for x

$$\textcircled{1} \left(x\sqrt{A} + \frac{B}{2\sqrt{A}} \right)^2 = \left(Ax + Bx + \frac{B^2}{4A} \right)$$

so

$$\textcircled{2} \left(x\sqrt{A} + \frac{B}{2\sqrt{A}} \right)^2 - \frac{B^2}{4A} + C = 0$$

| Proof

How helpful was Egan?

not
helpful



very
helpful

$$\frac{(2\sqrt{A}x + \frac{B}{2\sqrt{A}})^2}{2} = \frac{2\sqrt{A}x^2 + 2Ax + \frac{B^2}{4A}}{2}$$

$$\frac{2Ax}{2\sqrt{A}} + \frac{B}{2\sqrt{A}} = \frac{\pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$\frac{2Ax}{2\sqrt{A}} = \frac{-B \pm \sqrt{B^2 - 4AC}}{2\sqrt{A}}$$

$$2Ax = -B \pm \sqrt{B^2 - 4AC}$$

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

$$\left[\frac{-B \pm \sqrt{B^2 - 4AC}}{2A} \right] = x$$

Too long, I missed some things.

Summary:

- Paper prototype brought project to life
- We are not our users
- Embrace change

Questions?

