

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!!

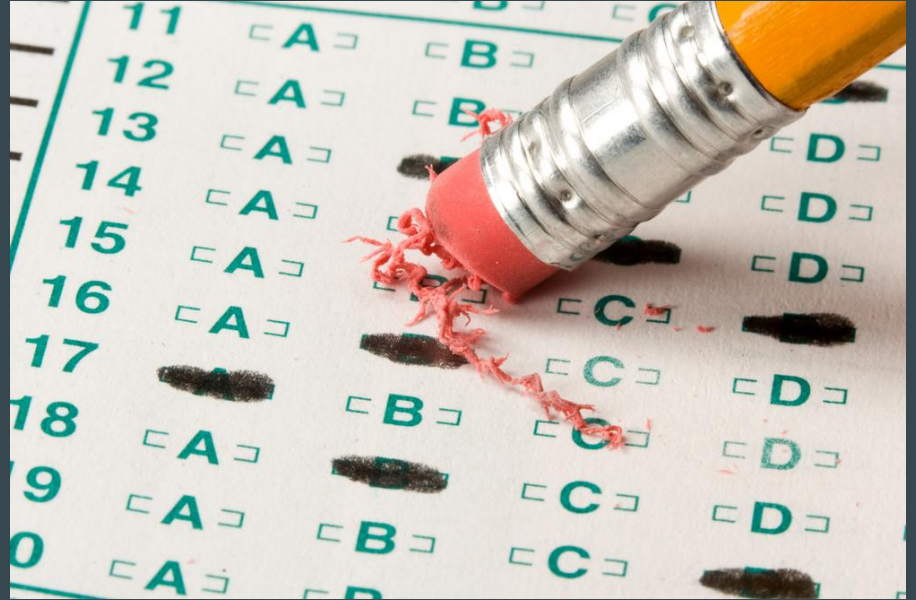
What should I study?

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!



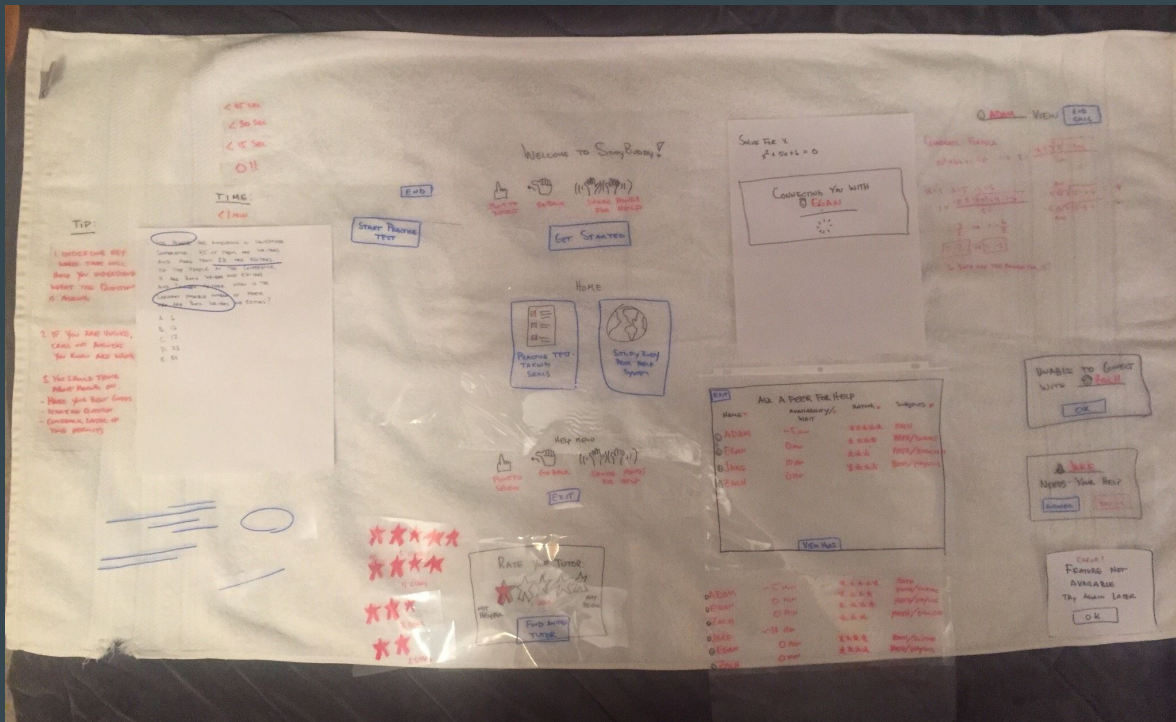
Initial Paper Prototype

Overview

AR Glasses

Transparent Sheets represent AR

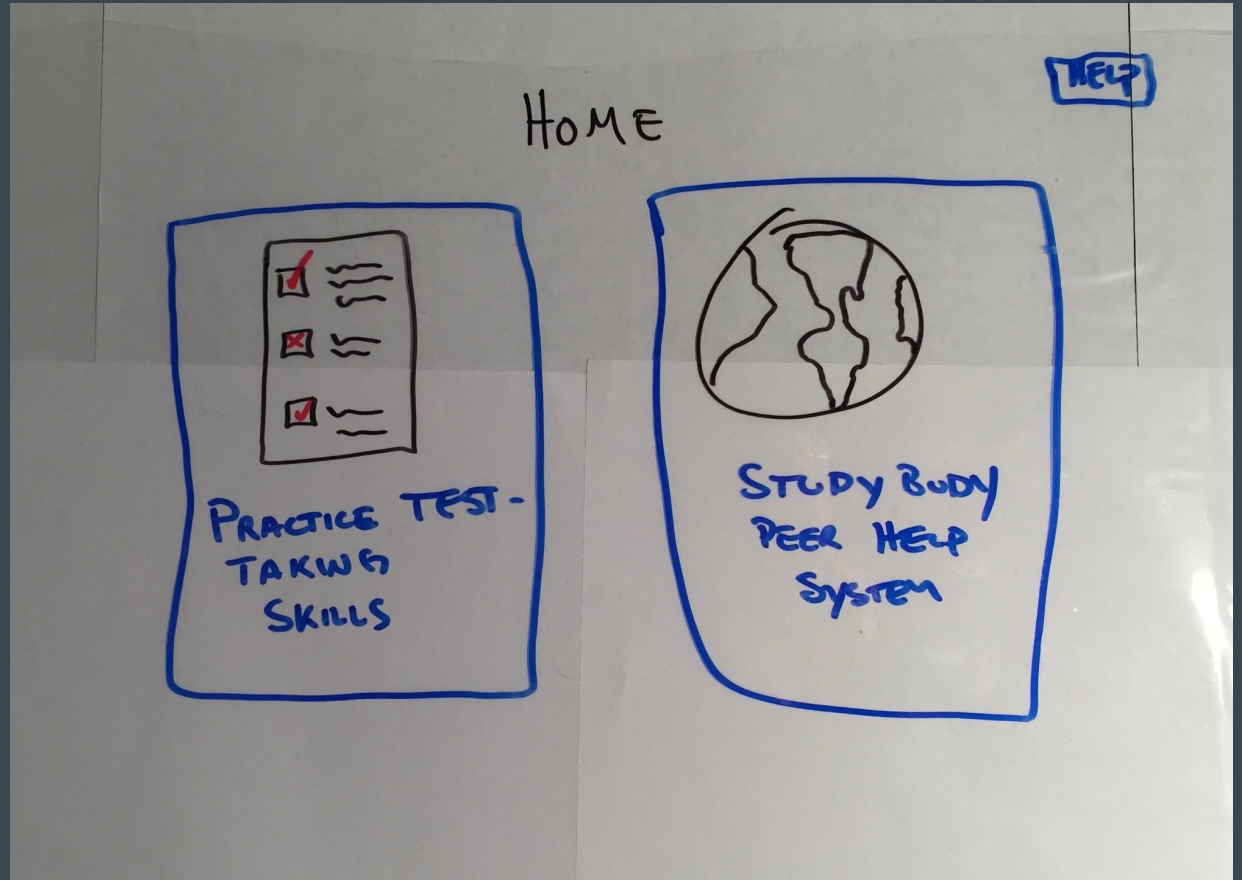
Glasses analyze users test / study material



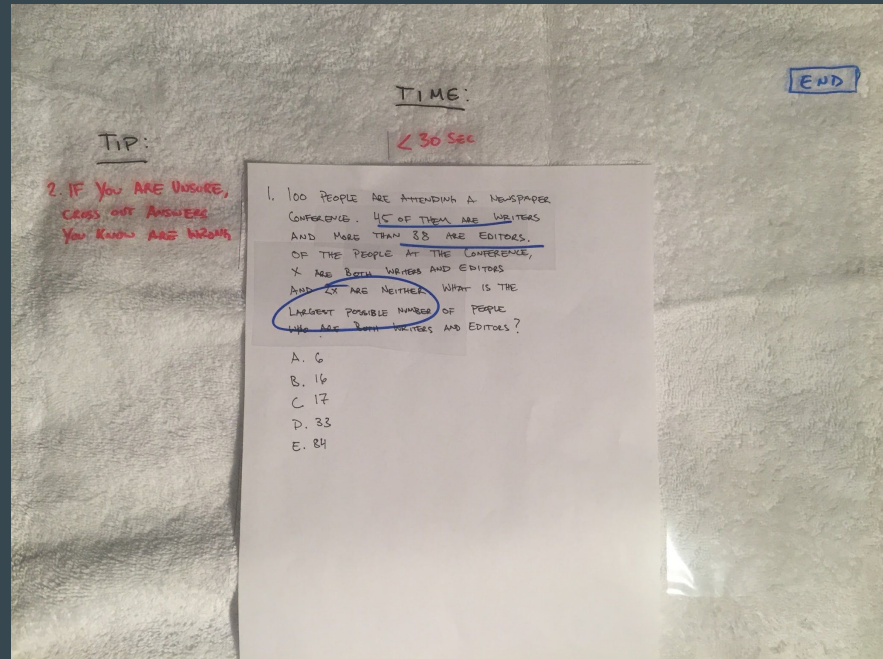
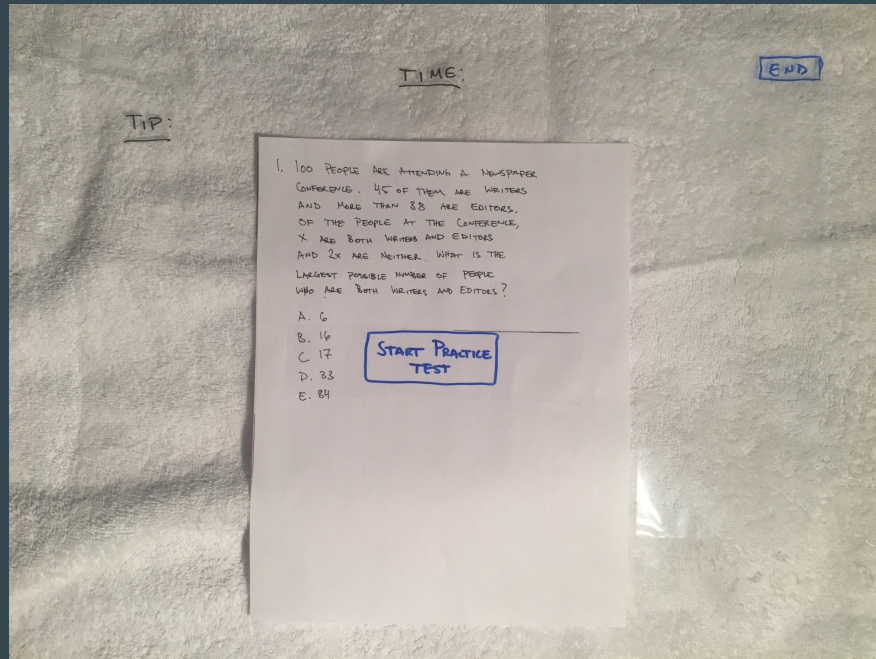
Tasks

Test Taking Tips

Peer Help System



Task 1 - Test Taking Tips



Task 2 - Peer Help System

Solve For X
 $x^2 + 5x + 6 = 0$

EDIT

ASK A PEER FOR HELP

NAME	AVAILABILITY/ WAIT	RATING	SUBJECTS
ADAM	5 min	★★★★	MATH
EGAN	0 min	★★★★	BIO/SCIENCE
JAKE	10 min	★★★	MATH/SCIENCE
ZACH	0 min	★★★★	BIO/PHYSICS

VIEW HELP

Solve For X
 $x^2 + 5x + 6 = 0$

EGAN VIEW **END CALL**

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

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

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

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

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

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

$= -2$ or -3

So BOTH ARE THE ANSWER FOR X!

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

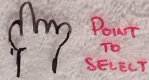
- Users didn't know they needed their own practice test.
- Little or no interaction with tips section.
- Some users found hints more distracting than helpful.
- Home screen was interruptive to study flow.
- Users failed to use the 'help' gesture properly.

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



GET STARTED

SOLVE FOR X

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

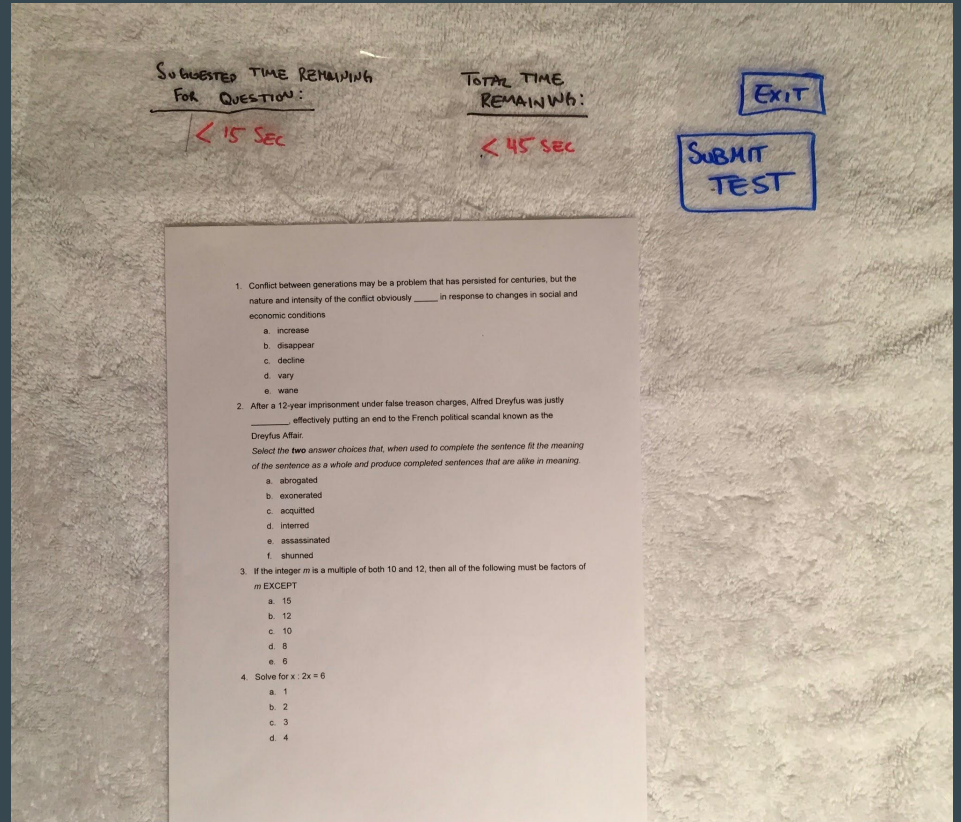
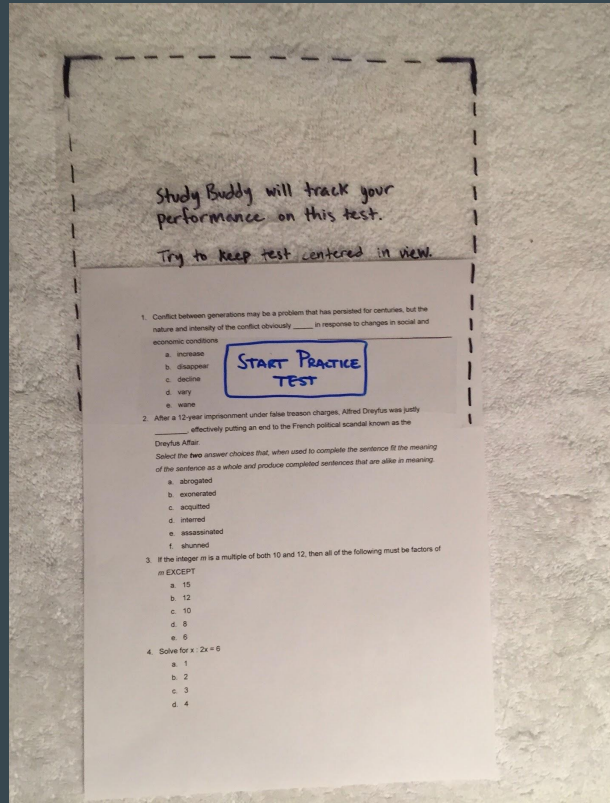
MENU

PRACTICE TEST

TUTOR SESSION

SETTINGS

Task 1 - Test Taking Tips



Task 1 - Test Taking Tips

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

- increase
- disappear
- decline
- vary
- 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.

- abrogated
- exonerated
- acquitted
- interred
- assassinated
- 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

- 15
- 12
- 10
- 8
- 6

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

- 1
- 2
- 3
- 4

ARE YOU SURE YOU'RE READY TO SUBMIT?

YES NO

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

- increase
- disappear
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- vary
- 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.

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- 15
- 12
- 10
- 8
- 6

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

- 1
- 2
- 3
- 4

Score 70%

Results: Avg. Time per Question 9!

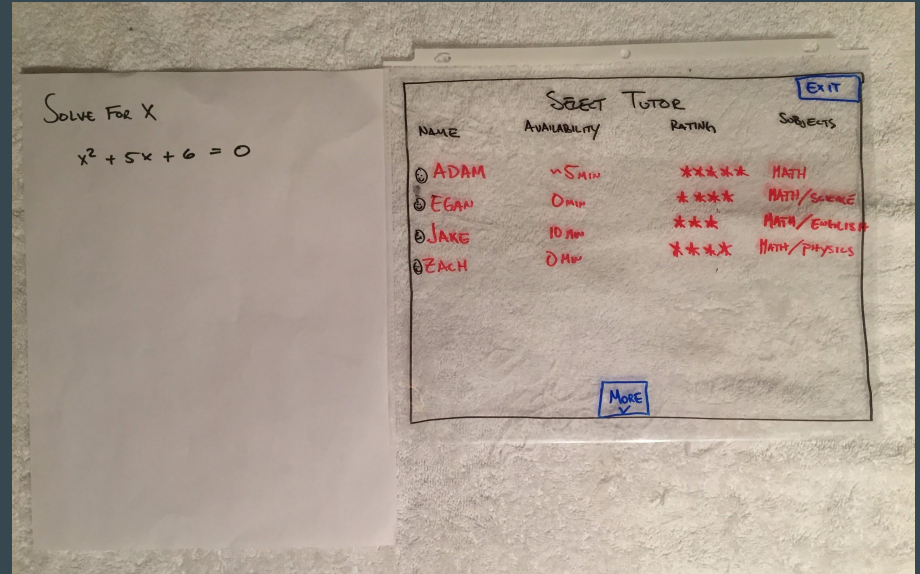
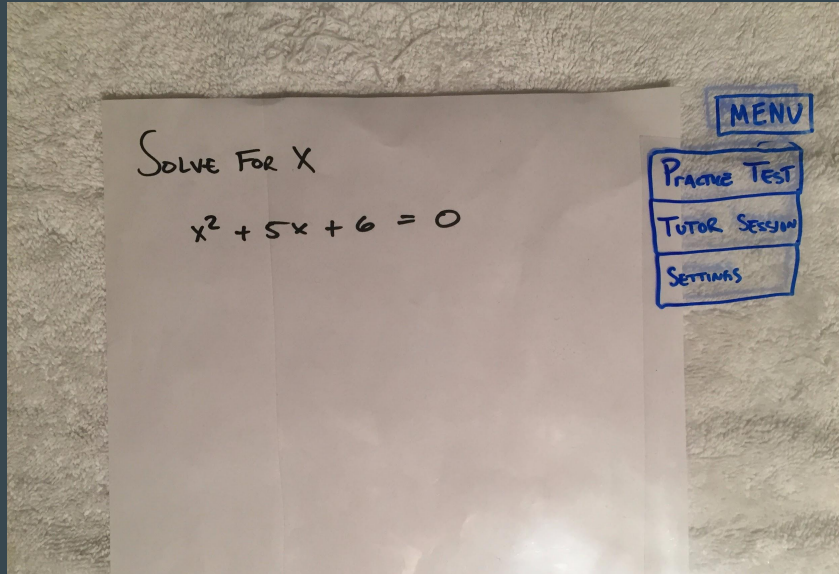
Topics to Study: Sentence Fixing

Tips: If you don't know an answer, skip it and come back. (102)

Question Overview

Exit

Task 2 - Peer Help System



Task 2 - Peer Help System

Solve for X

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

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

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

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

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

EGAN VIEW END CALL

QUADRATIC FORMULA

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

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

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

$$= \frac{-4}{2} \text{ or } = \frac{-6}{2}$$

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

So BOTH ARE THE ANSWER FOR X!

$$-5 \oplus \sqrt{25 - 4 \cdot 6} = -4$$

$$-5 \ominus \sqrt{25 - 4 \cdot 6} = -6$$

Solve for X

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

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

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

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

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

RATE YOUR TUTOR



NOT HELPFUL

5 STARS!

VERY HELPFUL

Digital Mockup

StudyBuddy



point
to select

Get Started

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

- a. followed
- b. stopped

Cheryl Allen

Select the two options that best describe the sentence in the meaning of the sentence as a whole and indicate completed sentences that are also in meaning.

- a. stopped
- b. followed
- c. followed
- d. followed
- e. followed

3. If the integer n is a multiple of both 10 and 15, then the integer n is a multiple of _____.

- a. 10
- b. 15

- c. 30
- d. 45

- e. 1
- f. 2

- g. 3
- h. 4

- 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.
 - increase
 - disappear
 - decline
 - vary
 - vane
- After a 12 year imprisonment under false treason charges, Alfred Dreyfus was justifiably _____, 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.

 - straggled
 - exonerated
 - apostrophed
 - interested
 - assassinated
 - stunned
- If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m EXCEPT
 - 15
 - 12
 - 10
 - 5
 - 6
- Solve for x : $2x = 8$
 - 1
 - 2
 - 3
 - 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. wane

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. shunned

3. If the integer n is a multiple of both 10 and 12, then all of the following must be factors of n 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 criterion that has persisted for centuries. But the nature and intensity of the conflict obviously _____ in response to changes in social and economic structure.

2. After a 12-year imprisonment under false treason charges, Alfred Dreyfus was _____.

3. If the integer n is a multiple of both 10 and 12, then all of the following must be factors of n EXCEPT

Start Practice Test

- a. 1
- b. 2
- c. 3
- d. 4

Suggested time
remaining for question:

0:17

Total time
remaining:

2:12

Exit

Submit

- 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.
 - increase
 - disappear
 - decline
 - vary
 - wane
- 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.

 - exonerated
 - exonerated
 - acquitted
 - interned
 - assassinated
 - shunned
- If the integer m is a multiple of both 10 and 12, then all of the following must be factors of m EXCEPT
 - 15
 - 12
 - 10
 - 6
 - 8
- Solve for x : $2x + 6 = 0$
 - 1
 - 2
 - 3
 - 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. vary
- e. exist

2. When a 12-year-old prisoner named Salim was charged, Alfred Dreyfus was _____
_____ of the _____
_____ of the _____
_____ of the _____

Are you sure you want to submit?

- a. strangled
- b. assassinated
- c. executed
- d. hanged

Submit

Cancel

- a. 15
- b. 12
- c. 14
- d. 8
- e. 0

4. Solve for x: $2x = 8$

- 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

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 complete sentences that are alike in meaning.

- a. stigmatized
- b. exonerated
- c. absolved
- 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 : $2x = 6$

- a. 1
- b. 2
- 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. fluctuates
- b. escalates
- c. intensifies
- d. varies

Select Topic

2. After a _____ effectively getting around to the French subject, he is known as the

Shaylar Affair.

Select the best answer choice that most closely fits the meaning of the word as it is used in the sentence.

- a. unexplained
- b. unrespected
- c. unacknowledged
- d. unacknowledged
- e. unacknowledged

Verbal Reasoning

3. If the integer n is a multiple of both 10 and 12, over all of the following must be factors of n .

- a. 10
- b. 12
- c. 15
- d. 20
- e. 30

4. Solve for x : $2x = 8$

- a. 1
- b. 2
- c. 3
- d. 4

Quantitative Reasoning

Exit

Select Tutor

Name

Rating ▼

Availability ▼

James



Now

Adam



Now

Egan



5 min

Zach



10 min

More ▼

Egan's
Notes

End Call

Given $Ax^2 + Bx + C = 0$ 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 the equation (left side) can be equal to zero (right side)

Solve by setting both factors equal to zero

$$x-1=0$$
$$x=1$$

$$x-8=0$$
$$x=8 \leftarrow \text{solutions}$$

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

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

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

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

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

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

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

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

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

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

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

Too long, I missed some thing.

Proof

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

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

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

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

Proof

so

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

How helpful was Egan?

not helpful



very helpful

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

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

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

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

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

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

Too long, I missed some things.

Summary:

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

Questions?

