



Strategic Math Instruction for the GED: Test-Taking Strategies for **Linear Equations Concepts**



Kellie Blair Hardt
Hardt2Heart Adult
Education Services

Kellie Blair Hardt



- Kellie's Story-

- Kellie's Gets a GED
Coloring Book-

- GEDTS
Board Member-

- GED Math Tutor & Board Member @ GED Testing Service
- 20+ years of middle/high school math/science/special education
- 20+ years of adult education, math
- Hardt2Heart Adult Education Services, LLC
- B.A Psychology, M.Ed Special Ed.
- **GED Graduate!**



**If it's in blue, it's for you!*

Session Overview

The Strategy Behind The Score

- Common misconceptions
- Hidden cognitive barriers
- What every GED math instructor should know

Small Instructional Shifts

- Enhancing math engagement with ALT
- Addressing Dyscalculia
- Ready-to-use resources
- Hands-on practice

Test-Taking Strategies for Linear Equations

- Addressing missing points
- Utilizing Slope-Intercept Form
- Which concept to tackle first
- Recognizing patterns quickly

The Calculator- A Tool, Not a Crutch

- Reducing cognitive overload
- Checking reasoning
- Increasing confidence & time

Session Overview: Where We've Been

Indicators:

add/subtract
multiply/divide
multiple operations
quadratic equations

Related Indicators:

computing w/linear
expressions
computing w/polynomials
factoring polynomials



ALGEBRAIC COMPUTATIONS

- Roll up your sleeves with algebraic operations
- Quadratic equations
- Factoring polynomials
- The Quadratic Formula



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$3x^2 + 7x - 6$$

Session Overview: What We're Doing Now

Indicators

calculate slope from a table, graph or equation

slope-intercept form

Related indicators

graphing equations

unit rate as slope

writing equations from points and/or slope; working with parallel and perpendicular slopes

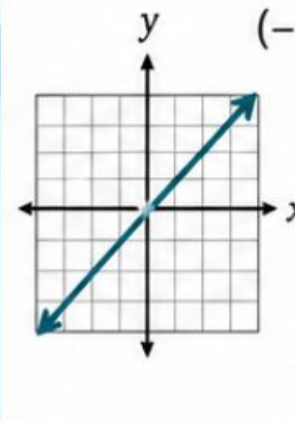


SLOPES / GRAPHING / LINEAR EQUATIONS BASICS

- Slopes from tables, graphs, & equations
- Graphing in slope-intercept form
- Writing equations from points & slopes
- Parallel & perpendicular slopes

$$3y - 15 = -6x$$

$$y = -2x + 5$$



$(-4, -7)$ and $(-6, 9)$

$$y = -8x - 39$$

$$m = 2$$

$$b = 1$$

Small Instructional Shifts That Matter

Enhancing Math Engagement at all Levels

“What are you hoping this session will provide?”

- Details about how the test works
- Specific math concepts on GED Test
- Teaching/Test-taking Strategies

More strategies
to engage
students

Connecting with
students

Classroom Tips
and tricks to
help **students**

Increase
student &
teacher trust

Increasing math
confidence for
students

Student
classroom
management

Small Instructional Shifts

Language shapes how adults experience learning

In an andragogic mindset, the term student is often associated with K–12 environments, where learning is typically teacher-directed and compliance-based.

The term learner, reflects adult education contexts—such as GED programs, workforce training, higher education, and professional learning—where autonomy, experience, and self-direction are central.

Using learner acknowledges adults as active participants in their own learning rather than passive recipients of instruction.

Small Instructional Shifts

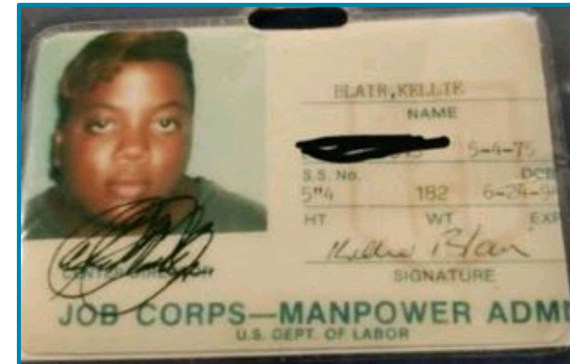
Language shapes how adults experience learning

Experience is Everything

Adult learners were once students.

For some, the term *student* may carry associations with:

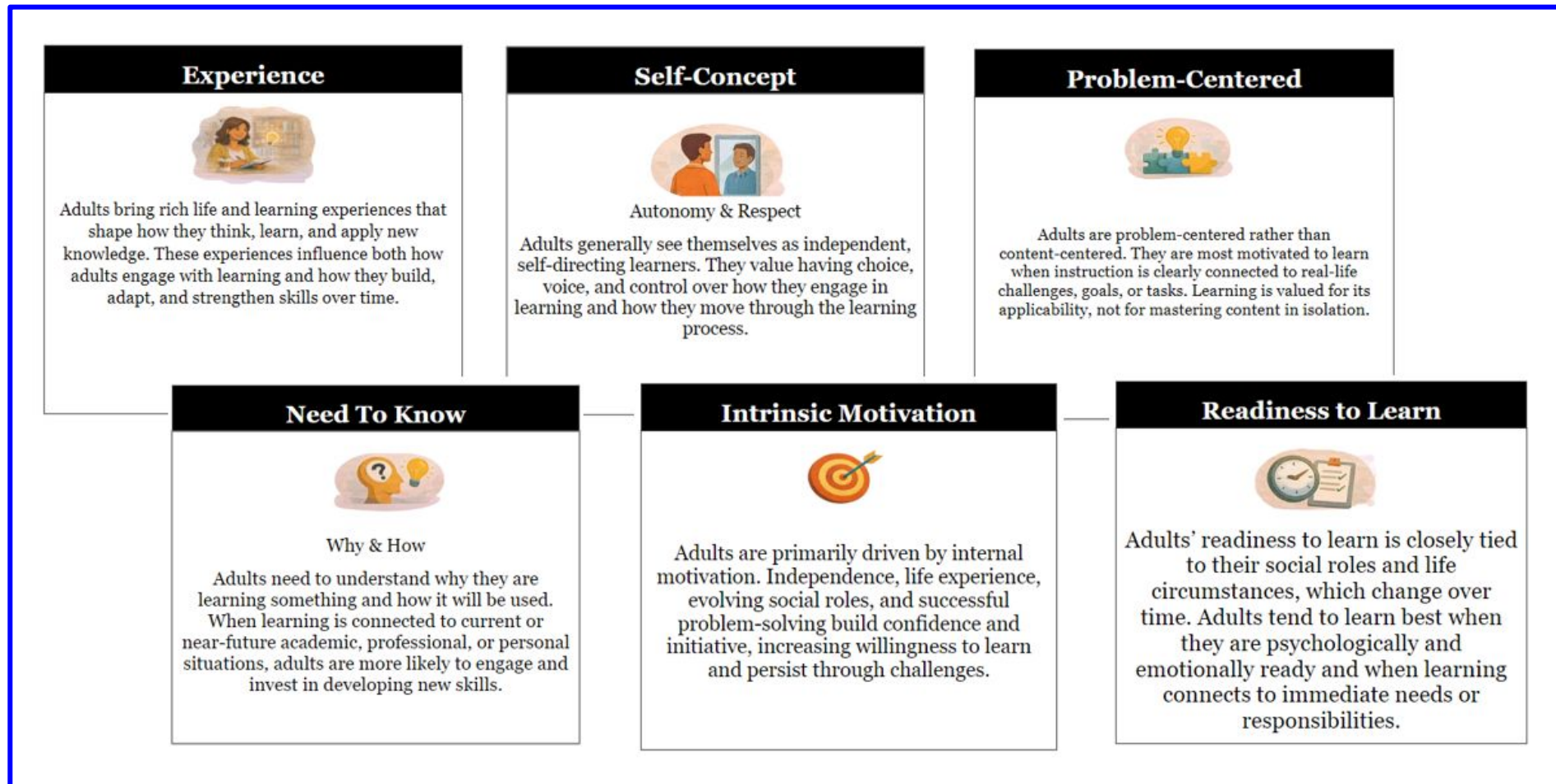
- Past academic failure
- Shame or embarrassment
- Lack of voice or control
- Being labeled, tracked, or underestimated



Because of these experiences, language and actions that echoes K-12 schooling can unintentionally trigger resistance, disengagement, or self-doubt—even when instruction is well-intentioned.

Small Instructional Shifts

Adult Learning Theory in the GED Math Classroom



Small Instructional Shifts

Dyscalculia in the GED Math Classroom

Dyscalculia is a specific learning difference that affects a person's ability to understand, process, and work with numbers and mathematical concepts.

In adult education, it may impact a learner's ability to perform calculations, estimate quantities, recognize numerical patterns, understand place value, interpret graphs, manage time, or apply math in everyday situations, despite having average or above-average intelligence and adequate instruction.



The Strategy Behind the Score

Winning Before the Math Begins

The Strategy Behind the Score

Why Strategy Matters

As of February, 2026:

208,999 adult learners have passed 3 of the 4 required GED tests
and never finished the final test

166,235 learners/ 80% need to complete Math

- **High Impact Indicators**
- **Math anxiety**
- **Cognitive overload**
- **Lack of strategy**
- **Lack of connection**
- **Lack of confidence**

The Strategy Behind the Score



EVERY QUESTION COUNTS

- ✓ Questions are **not weighted** differently—each typically counts **equally** toward the final score.
- ✓ It's not about doing the hardest problems—it's about answering **as many correctly as possible**, no matter the type.



**Accuracy + Efficiency
+ Strategy = Success**



NO PENALTY FOR WRONG ANSWERS

- ✓ Wrong answers **do not count** against you.
- ✓ The GED Math test measures what you **know**, not what you don't.
- ✓ Only **correct** answers count toward your score.
- ✓ There's **no penalty for guessing**. So even if you're unsure—take your best shot! Leaving answers blank means missing out on points.



"THREE MINUTES TO WIN IT!" STRATEGY



Prioritize Questions: Start with questions that can be answered quickly. This builds confidence and saves time.



Choose & Flag: If a question takes longer than three minutes, choose an answer, flag it, and move on. If there's time, come back to it later.



Watch the Clock: Keep an eye on the clock. With the "three minutes to win it" strategy, you'll have plenty of time to go back, review, and pick up more points.

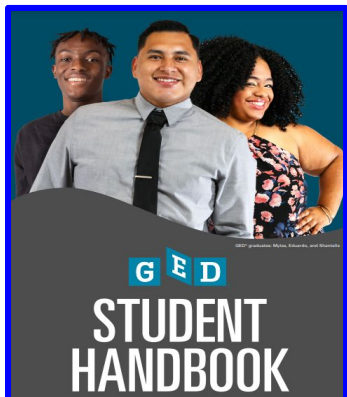
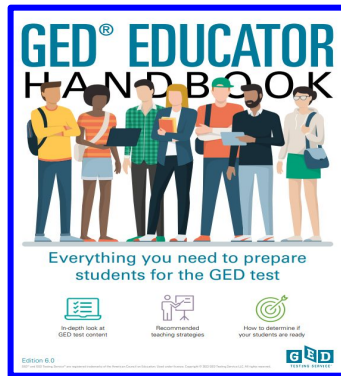
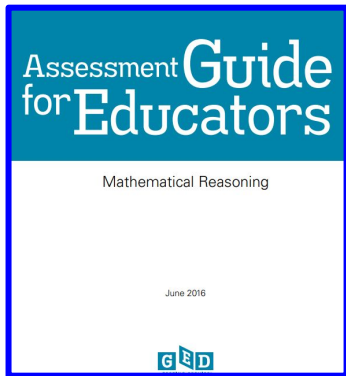
The Strategy Behind the Score

5 Things Every GED Math Instructor Should Know

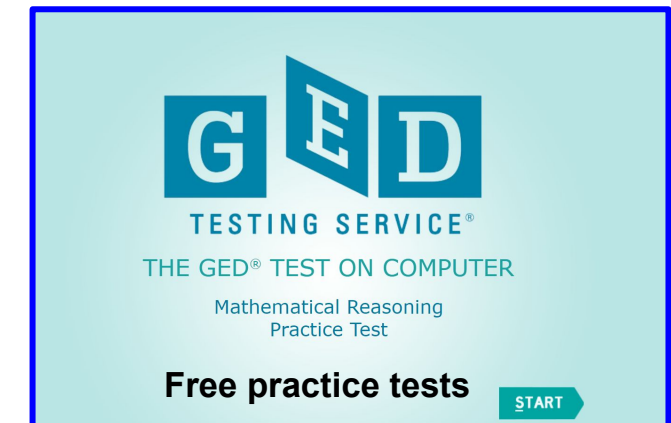
1. Think like an adult learner, not like a mathematician.
2. Teach test-taking strategies, in addition to traditional math instruction.
3. Provide and practice the [-formula sheet-](#) in class often, especially geometry vocabulary, no matter content level of class.
4. Create your own learner account using last name as “**CANDIDATE.**” –non school email.
5. Take the [GED READY PRACTICE TEST](#) several times & explore [GED FLASH](#).

The Strategy Behind the Score

Toolbox Every Great GED Math Instructor Needs



- all resources for educators & admin-



The Calculator- A Tool, Not a Crutch

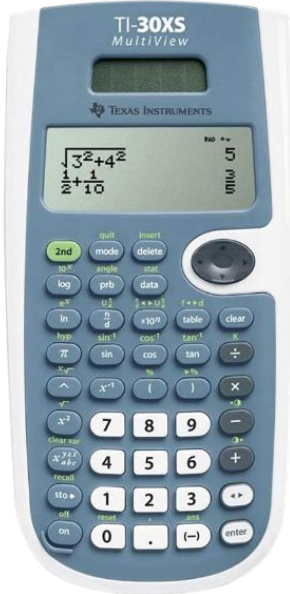
Teaching Strategies Build Understanding. Test-Taking Strategies Build Opportunity.

Test-Taking Strategies for Linear Equations

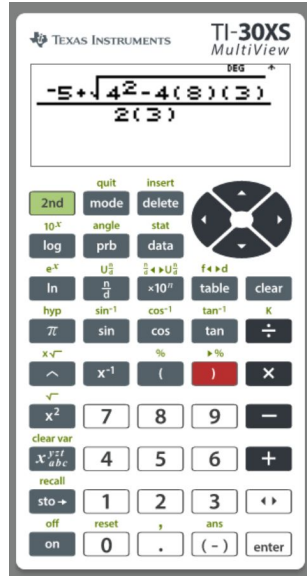
Teaching Strategies Build Understanding. Test-Taking Strategies Build Opportunity.

The Calculator- A Tool, Not a Crutch

TI-30XS Multiview: The Right One Counts

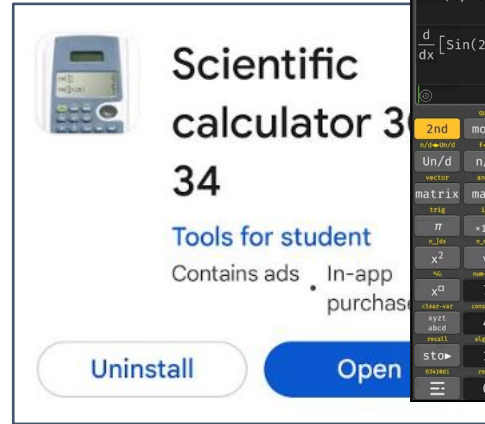


-Hand held-



-Computer
Emulator -

-TI-30xs Guide
for Teachers-



-Android Google Play-

-GED calculator
reference sheet-



-Free web based for
computers, Android, iPhone
(ads)-

Test-Taking Strategies For Linear Equations

CALCULATOR SKILLS

- $\frac{a}{b}$ Fractions
- .25 Decimals
- % Percents
- +/- Integers
- PEMD DAS Order of Operations
- x^2 Powers & Roots
-  Data & Table Buttons
-  And More!



HIGH IMPACT INDICATORS – LINEAR EQUATIONS

1 CONVERTING EQUATIONS OF A LINE TO SLOPE-INTERCEPT FORM

$$Ax + By = C \rightarrow y = mx + b$$

$$\begin{aligned} 3x + 2y &= 6 \\ -3x \quad -3x \\ 2y &= -3x + 6 \\ y &= -\frac{3}{2}x + 3 \end{aligned}$$

2 WRITING EQUATIONS OF A LINE IN SLOPE-INTERCEPT FORM USING TWO POINTS

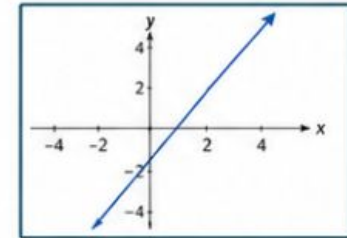
$(-4, -7)$ and $(-6, 9)$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y = -8x - 39$$

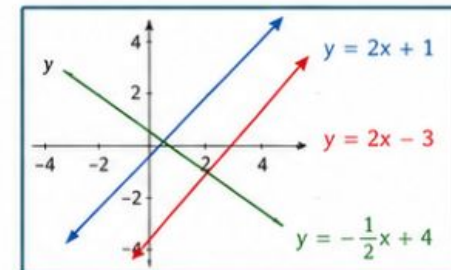
3 GRAPHING EQUATIONS OF A LINE IN SLOPE-INTERCEPT FORM

$$\text{Graph } y = \frac{3}{2}x - 4$$



4 PARALLEL & PERPENDICULAR LINES IN SLOPE-INTERCEPT FORM

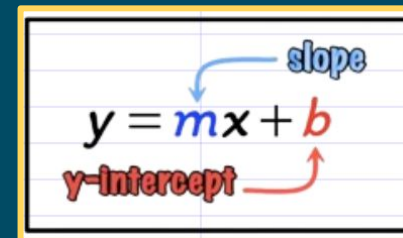
Identify relationships between lines.



Test-Taking Strategies For Linear Equations

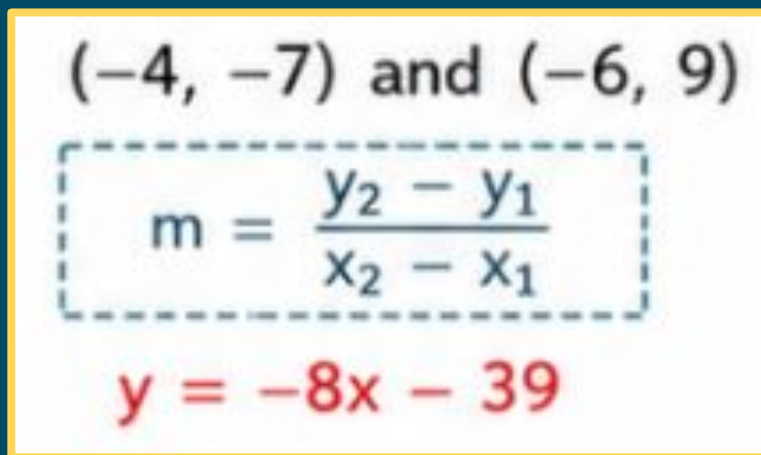
Roll-up Your Sleeves!

Strategies for:



A diagram showing the slope-intercept form of a linear equation, $y = mx + b$, on a grid. A blue arrow points from the label "slope" to the coefficient m . A red arrow points from the label "y-intercept" to the constant b .

Write the Equation of a Line Given Two Point



A diagram showing the steps to find the equation of a line given two points. At the top, the points $(-4, -7)$ and $(-6, 9)$ are listed. Below them, the slope formula is shown in a dashed box: $m = \frac{y_2 - y_1}{x_2 - x_1}$. At the bottom, the resulting equation of the line is shown in red: $y = -8x - 39$.



Find the equation of a line that passes through the points $(-1, 2)$ and $(2, -1)$



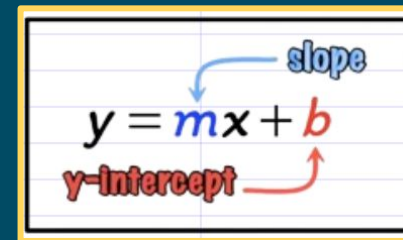
Find the equation of a line that passes through the points $(3, -4)$ and $(-2, 5)$



Find the equation of a line that passes through the points $(-3, 7)$ and $(4, -2)$

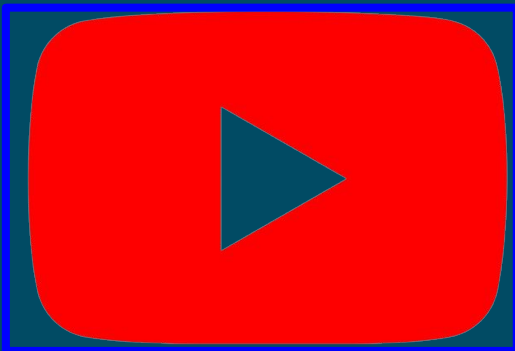
Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

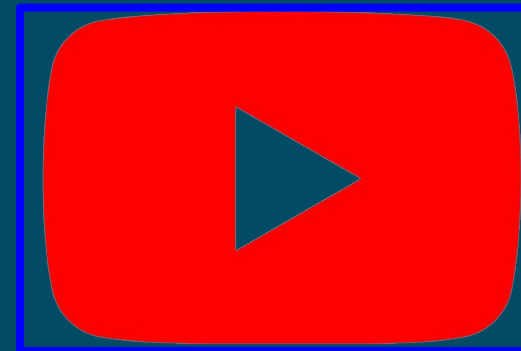
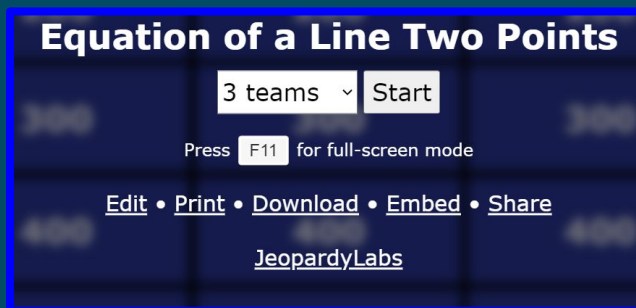


A diagram showing the slope-intercept form of a linear equation, $y = mx + b$, on a grid background. A blue arrow points from the label "slope" to the variable m . A red arrow points from the label "y-intercept" to the variable b .

RESOURCES: Write the Equation of a Line Given Two Point



Calculator

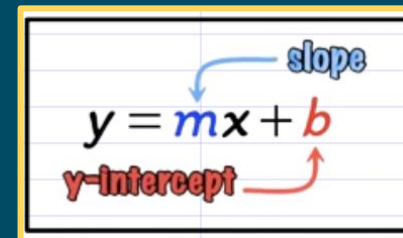


Manual

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

Basic Algebra for:


$$y = mx + b$$

Convert to Slope-Intercept Form

$$3y - 15 = -6x$$

$$y = -2x + 5$$



Rewrite the equation $2x - 3y = 6$ in slope-intercept form:



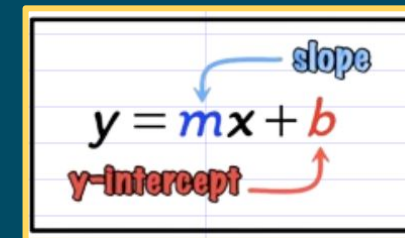
Rewrite the equation in
slope-intercept form: $4x + 5y - 20 =$
 0



Rewrite the equation in
slope-intercept form: $7x - y = 14$

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!



$$y = mx + b$$

slope

y-intercept

RESOURCES: Convert to Slope-Intercept Form

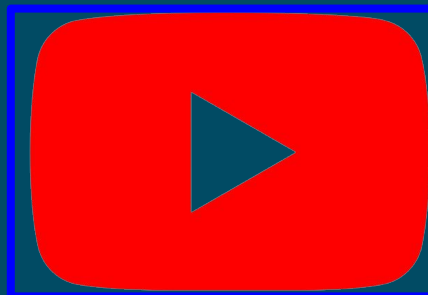
Linear Equations/slope-intercept form 1

3 teams

Press for full-screen mode

[Edit](#) • [Print](#) • [Download](#) • [Embed](#) • [Share](#)

[JeopardyLabs](#)



Linear Equations/slope-intercept form 4

3 teams

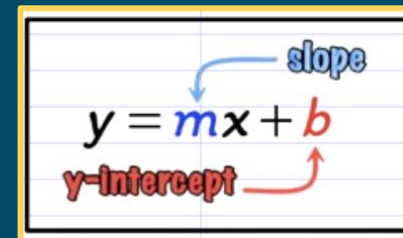
Press for full-screen mode

[Edit](#) • [Print](#) • [Download](#) • [Embed](#) • [Share](#)

[JeopardyLabs](#)

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!



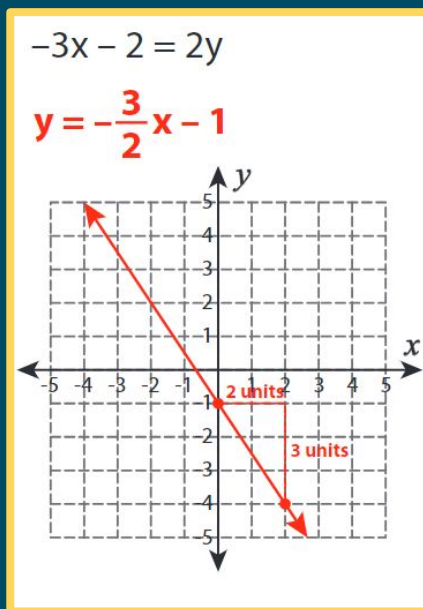
$$y = mx + b$$

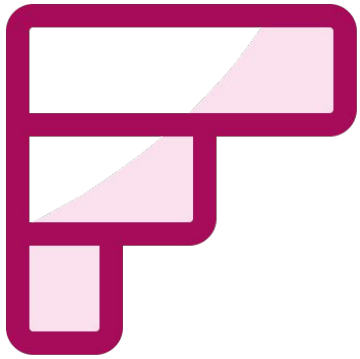
slope

y-intercept

Strategies for:

Graphing Equations in Slope-Intercept Form

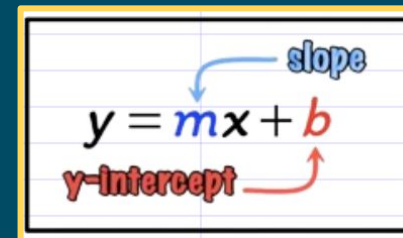




Rank your comfort level with each step of converting equations to slope-intercept form and then graphing it, with 1 being the most comfortable and 5 being the least comfortable.

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!



$$y = mx + b$$

slope

y-intercept

RESOURCES: Graphing Equations in Slope-Intercept Form

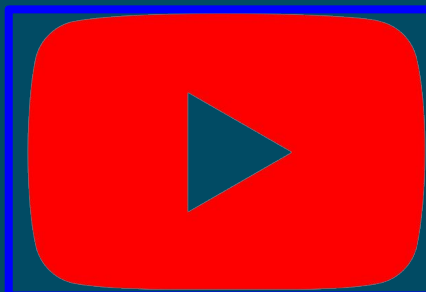
Linear Equations/slope-intercept form 2

3 teams ▾ Start

Press **F11** for full-screen mode

[Edit](#) • [Print](#) • [Download](#) • [Embed](#) • [Share](#)

[JeopardyLabs](#)



Linear Equations/slope-intercept form 3

3 teams ▾ Start

Press **F11** for full-screen mode

[Edit](#) • [Print](#) • [Download](#) • [Embed](#) • [Share](#)

[JeopardyLabs](#)

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

Strategies for:

Multiple Choice Graphing an Equation in Slope-Intercept Form

$$y = mx + b$$

slope

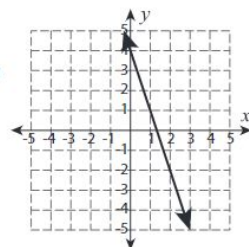
y-intercept

Which of the following equation represents the line on the graph?

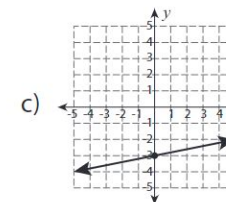
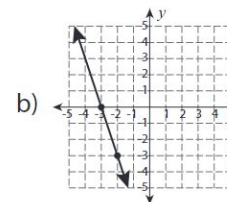
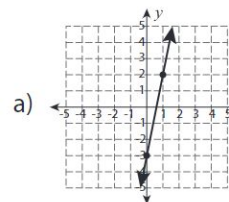
a) $y = x + 4$

b) $y = 2x - 4$

c) $y = -3x + 4$



Which of the following graph represents the equation $y = 5x - 3$?





Which graph represents: $2y = 8 - 8x$?



What is the equation of the given graph?



Which graph has the same slope and y-intercept as equation $2x = y - 1$

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

$y = mx + b$
slope
y-intercept

RESOURCES:

Multiple Choice

Graphing an Equation in Slope-Intercept Form

2 Which is the graph of the equation?

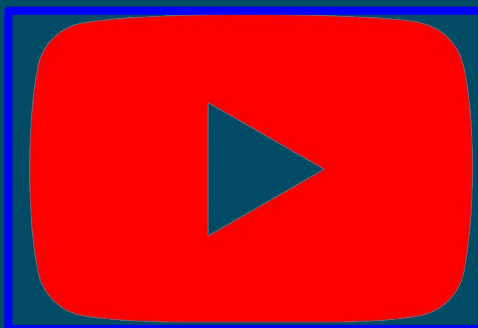
$2x + y = 2$

A.

B.

C.

D.



1 Which is the graph of the equation?

$y = -\frac{1}{2}x + 3$

A.

B.

C.

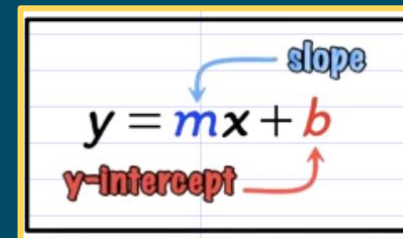
D.

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

Strategies for:

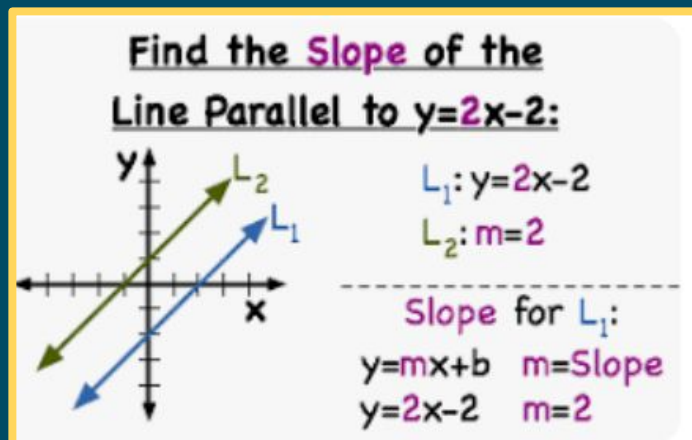
PARALLEL & PERPENDICULAR LINES IN SLOPE INTERCEPT FORM



$$y = mx + b$$

slope

y-intercept





Determine the relationship between the two lines given by the equations : $2x - 4y = 8$ and $4x - 8y = 16$



Determine the relationship between the two lines given by the equations: $3x + 6y = 9$ and $x - 2y = -3$



Determine the relationship between the two lines given by the equations: $5x - 2y = 10$ and $4x + 10y = 20$

Test-Taking Strategies For Linear Equations

Roll-up Your Sleeves!

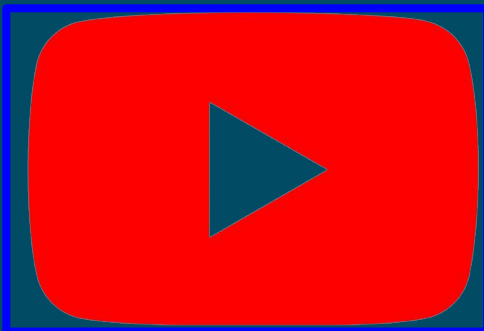
$$y = mx + b$$

slope

y-intercept

RESOURCES:

PARALLEL & PERPENDICULAR LINES IN SLOPE INTERCEPT FORM



Don't Forget This...Also in the packet

ADDITIONAL CALCULATOR PRACTICE:

How do you input fractions?

Press $\frac{n}{d}$ button

Key in numerator

Push down arrow

Key in denominator

Push 

Solve: $\frac{7}{8} + \frac{1}{3} =$

- Answer is $\frac{29}{24}$

You have entered $5 * 6 + 2$ but want to change the 6 to a 3.

1. Push the left arrow  on the oval until you get to 6

2. Key in 3 where the 6 is blinking

3. Press enter

How do you enter an exponent?

1. Enter the base number
2. Press $\wedge$ (middle of far left row)
3. Enter exponent
4. Press enter

What is 9^4 ?

- Answer is 6561

How do you access the green functions?

- Press 2^{nd}

Find the square root of 784

1. Press 2^{nd}
2. Press x^2
3. Key in 784
4. Press enter

- Answer is 28.

Table Check

Use table for:

$$y = 2x - 1$$

Find y when $x = 3$

1. Press table
2. Enter $2x-1$
3. Scroll to $x = 3$
- Answer is 5

Table Value

Use table for:

$$y = 3x + 2$$

Find y when $x = 4$

1. Press table
2. Enter $3x + 2$
3. Scroll to $x = 4$
- Answer is 14

How do you find cube roots?

1. Press 3
2. Press 2^{nd}
3. Press $\wedge$
4. Key in number
5. Press enter

Solve: $\sqrt[3]{216} =$

- Answer is 6

How do you input mixed numbers?

1. Press 2^{nd} button
2. Press $\frac{n}{d}$ button
3. Key in whole number
4. Push 
5. Key in numerator
6. Push down arrow
7. Key in denominator
8. Push 

Solve: $3\frac{1}{5} + 2\frac{2}{7} =$

- Answer is $\frac{192}{35}$

*Convert to Mix Number

What's the difference between $(-3)^2$ and -3^2

$$(-3)^2 = 9$$

$$-3^2 = -9$$

- Use parenthesis to solve negative exponents!

Enter the function $y = x + 3$. What are y values when x is -2, -1, 0, 1?

1. Press table
 2. Enter $x + 3$ (x is left of 4 button)
 3. Press enter until it goes to a chart
 4. Use  
- Answers:
 $(-2,1)(-1,2)(0,3)(1,4)$

SESSION SURVEY & THANK YOU!

Your feedback is important.
Please scan the
QR code below to rate this
session!

