

PLAN

1. Quiz!!!
2. Slope notes
3. Review questions on slope

Sep 11-1:39 PM

During Math Test
My answer: 28
Answer choices:
 17, 19, 26, 36.
Me: "well 26 is closer to 28, so that must be the answer."

Sep 11-1:44 PM

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\text{MidPoint} = \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$$

$$\text{Division Point} = x_1 + \frac{p}{w}(x_2 - x_1)$$

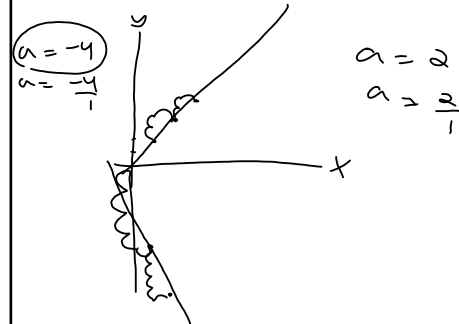
$$y_1 + \frac{p}{w}(y_2 - y_1)$$

Sep 12-1:31 PM

Slope

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

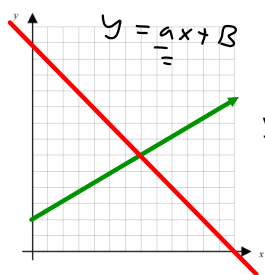
aka "rate of change"
 aka "rise over run"
 aka how steep the line is



Sep 11-3:57 PM

The slope of a line represents how steep the line is and whether it is positive, going up

or negative, going down



x_1, y_1
 $A(3, 2)$
 x_2, y_2
 $B(5, 3)$

$$a = \frac{3-2}{5-3}$$

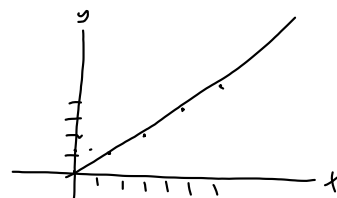
$$a = \frac{1}{2}$$

$$y = -x + 13$$

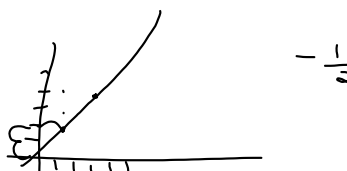
Sep 11-3:59 PM

$$a = \frac{1}{2} \rightarrow \text{rise}$$

$$a = \frac{1}{2} \rightarrow \text{run}$$



$$a = 2 = \frac{2}{1}$$



Sep 12-2:19 PM

The slope is 0 when horizontal —
 or undefined when vertical ||

$a = \frac{\text{rise}}{\text{run}}$

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

$a = \frac{8 - 8}{5 - 2} = \frac{0}{3}$
 $a = 0$

$a = \frac{6 - 1}{5 - 5}$
 $a = \frac{5}{0}$

$y = 8$
 $x = 7$

Sep 11-3:59 PM

x_1, y_1
 $(6, 5)$

x_2, y_2
 $(6, 3)$

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

$a = \frac{3 - 5}{6 - 6}$

$a = \frac{-2}{0}$

Sep 13-1:44 PM

To find the slope...

1) use the formula $a = \frac{y_2 - y_1}{x_2 - x_1}$ \rightarrow rise \rightarrow run

$a = \frac{6 - 2}{8 - 1}$
 $a = \frac{4}{7}$

Step 1: label the coordinates
 A (1, 2) B (8, 6)

Step 2: Replace the letters with the values
 Step 3: Solve
 Step 4: Validate (check - does it make sense)

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

Sep 11-4:02 PM

To find the slope...

1) use the formula $a = \frac{y_2 - y_1}{x_2 - x_1}$

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

Sep 11-4:02 PM

Does it matter which point is x_1, y_1

Let's see

Let B be x_1, y_1 and A x_2, y_2

x_1, y_1 B (8, 6) x_2, y_2 A (1, 2)

$a = \frac{2 - 6}{1 - 8}$
 $a = \frac{-4}{-7} = \frac{4}{7}$

x_2, y_2 B (8, 6) x_1, y_1 A (1, 2)

$a = \frac{6 - 2}{8 - 1} = \frac{4}{7}$

Sep 11-4:13 PM

What is the slope between the following 2 points?

x_1, y_1 A (4, 2) x_2, y_2 B (8, 0)

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

$a = \frac{0 - 2}{8 - 4}$
 $a = \frac{-2}{4} \rightarrow y$
 $4 \rightarrow x$

Sep 8-4:18 PM

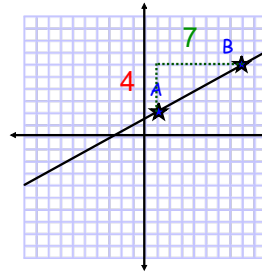
What is the slope between the following 2 points?

A (4, 2) B (8,0)

Sep 8-4:18 PM

2) use the graph paper
(count the squares from point to point)

$a = \frac{\text{rise}}{\text{run}}$ the rise is the change in height from A to B
the run is the change from left to right from A to B

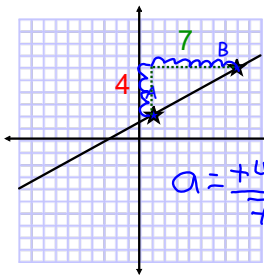


The rise is + if the line is rising (go up from left to right)
The rise is - if the line is descending (go down from left to right)

Sep 11-4:07 PM

2) use the graph paper
(count the squares from point to point)

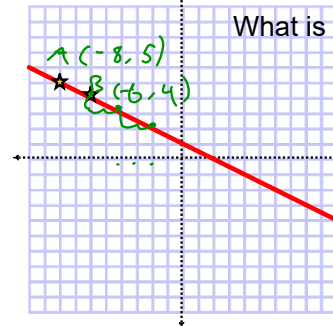
$a = \frac{\text{rise}}{\text{run}}$ the rise is the change in height from A to B
the run is the change from left to right from A to B



The rise is + if the line is rising (go up from left to right)
The rise is - if the line is descending (go down from left to right)

Sep 11-4:07 PM

What is the slope?



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

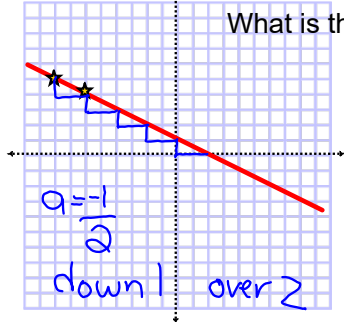
$$a = \frac{5 - 4}{-8 - (-6)}$$

$$a = \frac{1}{-2}$$

$$a = -\frac{1}{2}$$

Sep 11-4:19 PM

What is the slope?

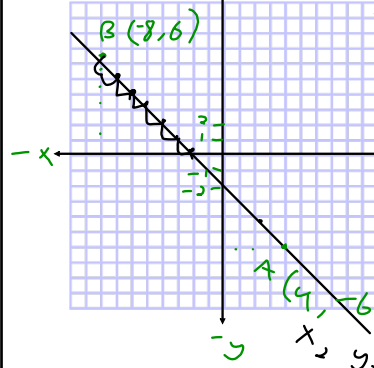


$$a = -\frac{1}{2}$$

down 1 over 2

Sep 11-4:19 PM

What is the slope?



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

$$\frac{-6 - 6}{4 - (-8)}$$

$$\frac{-12}{12} = -\frac{1}{1}$$

Sep 11-4:19 PM

U P S → solve
 understand Plan

$A(x_1, y_1)$ $B(x_2, y_2)$ $\left(\frac{2}{3}\right)$
 Point?

$P_x = x_1 + \frac{P}{W}(x_2 - x_1)$ $2:3 \rightarrow \frac{2}{2+3}$
 $\frac{P}{W} = \frac{2}{5}$

$A(3, 4)$ $B(6, 8)$ $\frac{P}{W} = \frac{2}{5}$
 $P_x = ?$
 $P_y = ?$

$P_x = 3 + \frac{2}{5}(6-3)$
 $P_x = 3 + \frac{2}{5}(3)$
 $P_x = 3 + 2$
 $P_x = 5$

Sep 13-2:08 PM

Possible test questions

$A(-3, 4)$ $MX = \frac{1}{2}(x-3)$
 $M(1, -2)$
 $B(?, ?)$
 $x_1 y_1$

$2 = x + 3$
 $2 + 3 = x$
 $5 = x$

$m_y = -2 =$

Sep 13-2:18 PM

Possible test questions

Sep 13-2:26 PM



Sep 13-2:25 PM

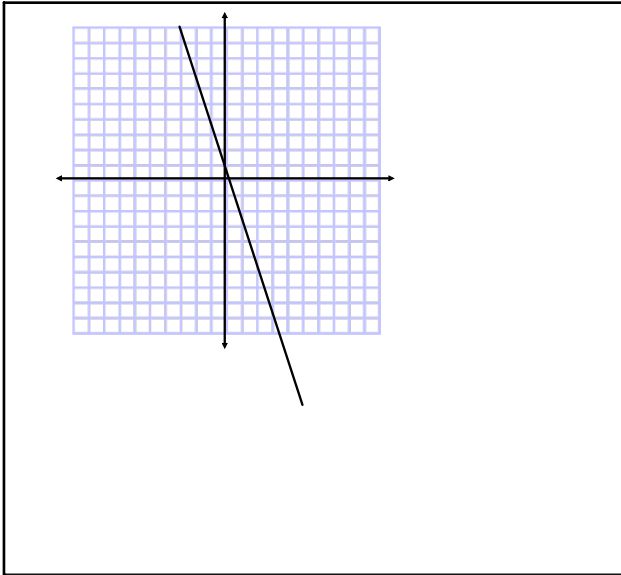
What is the slope?

$a = \frac{-4}{4} = -1$

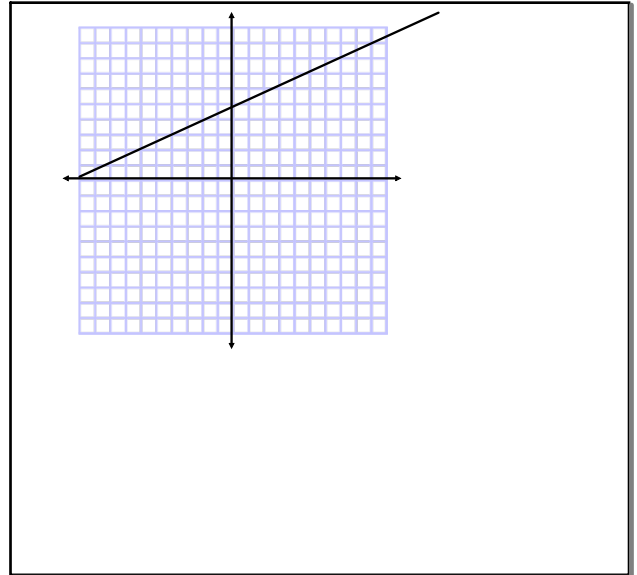
Sep 11-4:19 PM

What is the slope?

Sep 11-4:19 PM



Sep 11-4:19 PM



Sep 11-4:19 PM

To find the rule or equation of a line

We use the function form $y=ax+b$
or slope-intercept form

Equation

An equation is like a balanced scale.

The left side equals the right side

*Every point (x,y) on a line
satisfies the equation of that line.*

*If you plug it in the equation will remain
balanced.*

Sep 11-4:19 PM

$$y=ax+b$$

To find a rule:

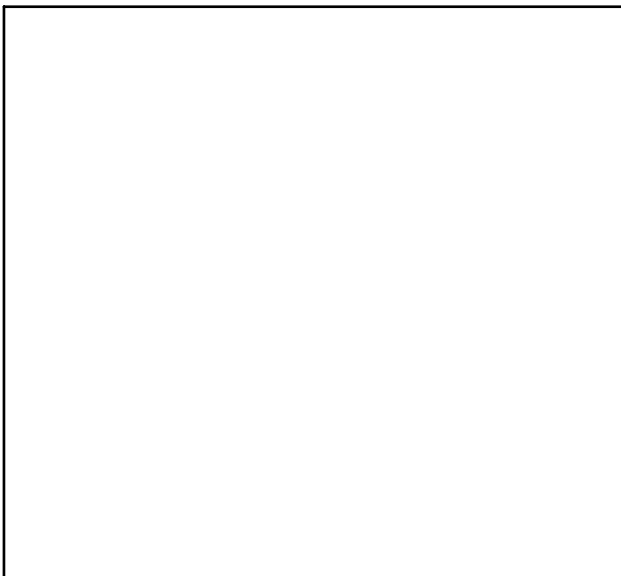
- 1) find a
- 2) Use a point and the slope and solve for b

If the slope = 2

And the point D is on the line D(15,4)

What is the rule?

Sep 14-9:17 AM



Sep 14-9:17 AM

Attachments

Funny-Math-Test-Picture.jpg