EQ: GPE.4 How do I calculate distance, midpoint, and slope?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 3, Lesson 1

1. Warm Up
2. G.CO.12 quiz
3. TI-Nspire activity
4. Closure

20 21

Distance, Slope, and Midpoint

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

1. Using the scratch paper and using a straight edge, draw each of the following:

- a segment (any length)

- an acute angle

Now, switch your paper with another person.

Now,

2. Construct a segment that is congruent to the original.

3. Construct an angle that is congruent to the original.

4. Construct the perpendicular bisector of the original segment.

5. Construct the angle bisector of the original angle.

G.CO.12 Quiz!

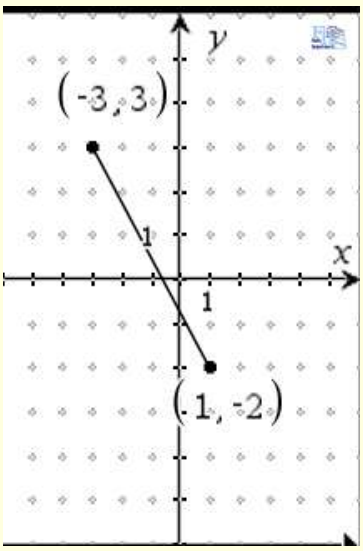
ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

Welcome to TI-Nspires!

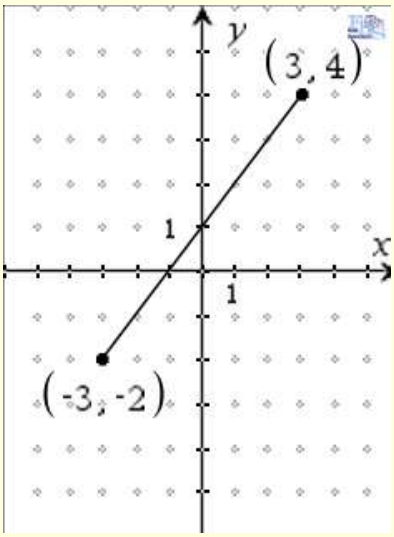
To move through the tabs, you can use your mouse, or press [ctrl] and then left/right.

Please choose the correct answers for each question. If you need help, ask your team!

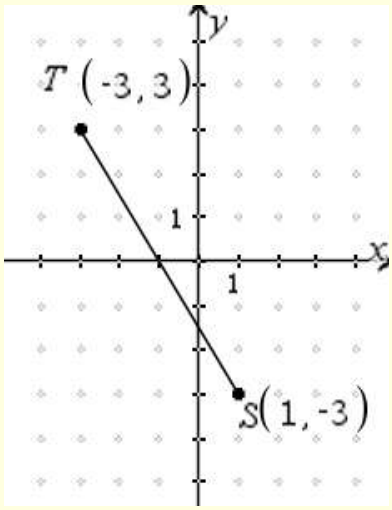
Length



Midpoint



Slope



Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

Explain the difference between slope and distance.

EQ: GPE.5 How do I identify parallel and perpendicular lines?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 3, Lesson 2
1. Warm Up
2. GPE.4 Quiz
3. Notes
4. Left-Side Practice
5. Closure

22

Parallell and Perpendicular lines

23

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

Given point P(4,2) and point R(-3,-3). Graph the points.

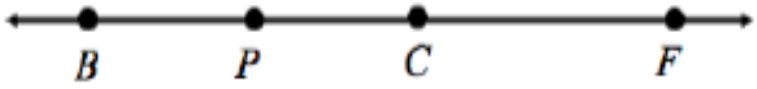
Then, calculate the following:

1) the distance between P and R.

2) the slope of $\overline{PR}$.

3) the midpoint between P and R.

4.) Given $\overline{BF} = 17, \overline{CF} = 9$ *and* $\overline{BP} = \overline{PC}$, what is the length of $\overline{PF}$?

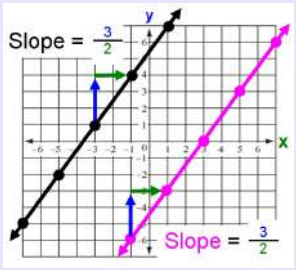


GPE.4 Quiz!

Parallel Lines

- Lines that never intersect.

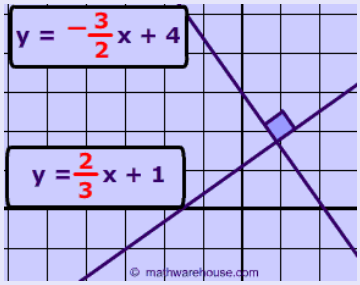
- Two lines that are parallel have the same slope



Perpendicular Lines

- 2 lines that intersect at a 90° angle.

- Two lines that are perpendicular have slopes that are negative reciprocals. (the product of their slopes is -1)



Ex: Given line c with a slope of -2, what is the slope of the line parallel to it?
Perpendicular to it?

Summary:

Left-Side Practice

For each of the following,

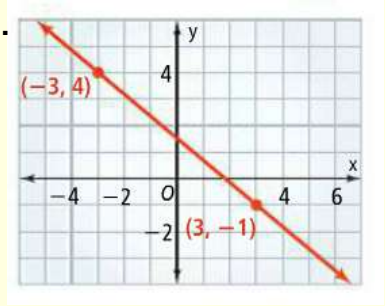
(a) identify the slope of the given equation

(b) write the slope of a line parallel to that line

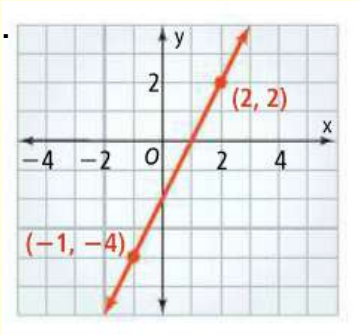
(c) write the slope of a line perpendicular to that line

1. $y = 3x + 1$
2. $y = -2/3x - 4$
3. $y = 2 - 5/4x$

4.



5.



*How would I draw a line perpendicular to this one?

6. $2x + 3y = 6$
7. $4x - 2y = 8$
8. $5x - 3y = 30$
9. $x + 2y = 8$

Extra Practice:

Given the following points, are the two lines parallel, perpendicular, or neither?

Line AB: A(2,0) B(4,-2)

Line FG: F(5,1) G(0,-4)

Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

Looking ONLY at the slopes, how do you tell when two lines are parallel and when two lines are perpendicular?

EQ: GPE.5 How do I graph lines using my calculator?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 3, Lesson 3

1. Warm Up
2. Notes
3. Rotations
4. Closure

24

Graph lines with a Calculator

25

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

1. Which pair of slopes could represent perpendicular lines?

(A) $\frac{1}{7}, 7$ (B) $\frac{1}{2}, \frac{2}{4}$ (C) $-\frac{3}{4}, \frac{4}{3}$ (D) $\frac{1}{3}, \frac{1}{3}$

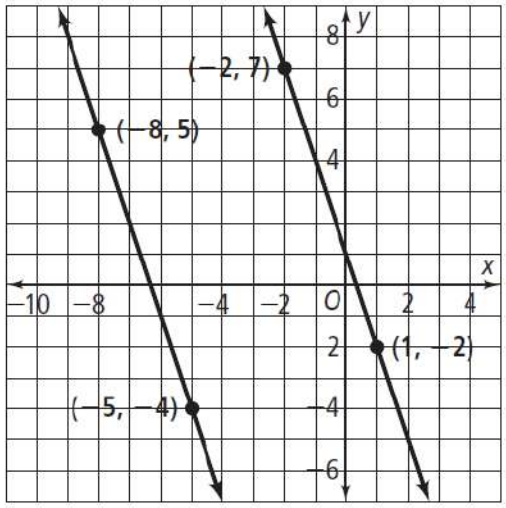
2. The lines shown in the figure at the right are

(F) parallel.

(G) perpendicular.

(H) neither parallel nor perpendicular.

(I) both parallel and perpendicular.

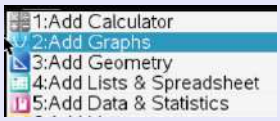


3. What are the slopes of the lines shown at the right?

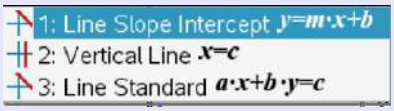
4.) W is between U and X,
V is between U and W,
X is between V and Y,
$UY = 24$, $WY = 14$,
and $UV = VW = WX$.
What is the length of $\overline{XY}$?

Graphing lines on your calculator

- Open up a new document
- Then, choose 2: Add Graphs



- Menu
--> 3: Graph Entry/Edit
--> 2: Equation
--> 1: Line



y = 2x + 6 2x + 4y = -4

What is the slope and y-intercept for each line?

Ex: Graph the following lines. Then, find the slope and y-intercept for each.

1. y = 3x + 1

2. x + 2y = 8

3. -3y + 5x = 30

*changing your window
*ctrl-Z to undo your last command

Ex: Are the following two lines parallel, perpendicular, or intersecting? Explain.

5. 4y + 3x = 16
y = 4/3x - 2

6. 2x + 5y = 10
y = -2/5x - 3

Summary:

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

Rotation 1

Please answer in your IAN
(Left-side)

Are the following 2 lines parallel, perpendicular or intersecting? Explain.

$y = -4/3x + 15$

$4x + 3y = 3$

$y = 1/3x + 10$
$y = 3x + 2$

$y = 4x - 14$
$x + 4y = 32$

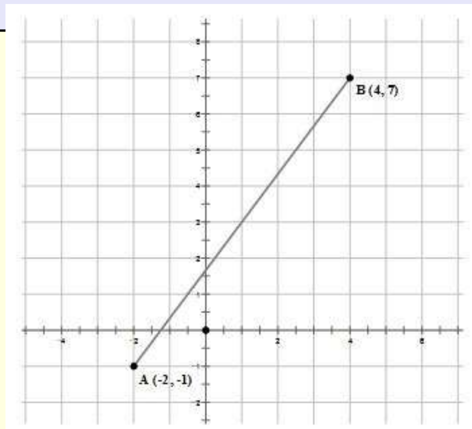
$y = -1/2x + 4$
$-x + 2y = -20$

$y = 4x - 12$
$-4x + y = -10$

Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.



Left Side...

Explain two different ways to find the distance between these two points.

EQ: G.CO.9 What pattern forms when two parallel lines are cut by a transversal?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 3, Lesson 4

1. Warm Up
2. GPE.5 Quiz
3. TI-NSpire activity
4. Closure

26

Parallel lines cut by a transversal

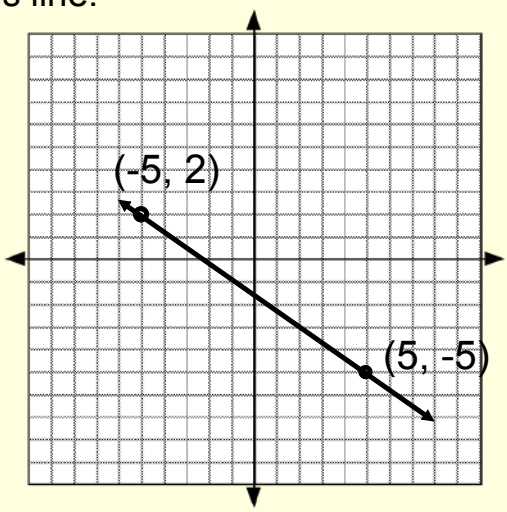
27

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

1. Given the line 5x - 2y = 12,
(a) write the slope of this line.
(b) write the slope of the line parallel to this line.
(c) write the slope of the line perpendicular to this line.

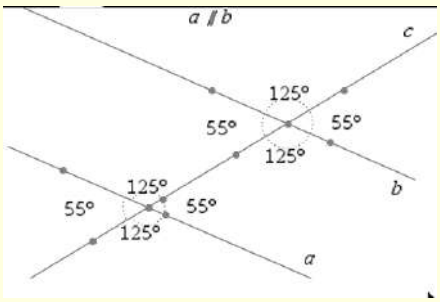
2. Given the line below,
(a) write the slope of this line.
(b) write the slope of the line parallel to this line.
(c) write the slope of the line perpendicular to this line.

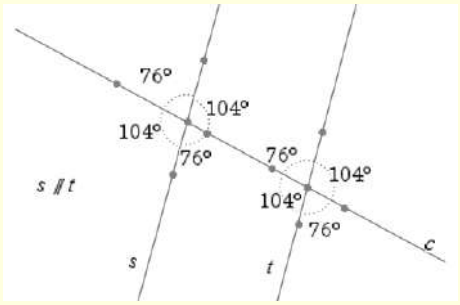


GPE.5 Quiz

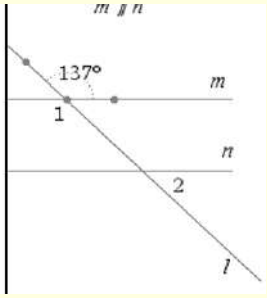
On the following pages you will see two pictures of lines and angles. Using your controls, grab line c. Then, move it around gently.

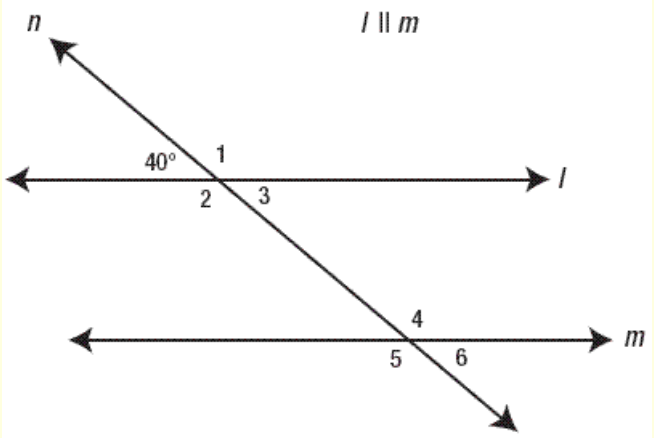
As you move line c, start to look for patterns in the angle measurements. You will record your observations in your calculator.





Based on the previous 2 pictures, look at the picture to the right, then answer the questions that follow.





Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

Solve for x and find the measure of each angle.