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. Quiz: G.CO.12
3. Practice
4. Closure

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Distance, Slope and Midpoint

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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-up

Warm Up:

1. In your IAN, using a straight edge, draw each of the following:

- a segment (any length)
- an obtuse angle

2. Construct a copy of your segment.
3. Construct a copy of your angle.
4. Construct the perpendicular bisector of your original segment.
5. Construct the angle bisector of your original angle.

G.CO.12 Quiz!

Name _____pd _____ IAN.page 18

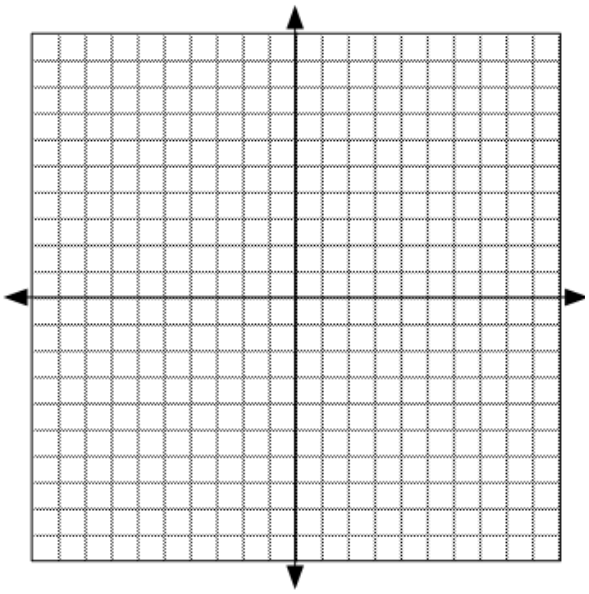
Problem 1...

On the graph below, plot and label these points: A (-6, -2) B (4, -2) C (4, 5)

(1) Connect the points to form a triangle.

(2) Calculate the following (Be sure to show all of your work!):

	$\overline{AB}$	$\overline{BC}$	$\overline{AC}$
Slope			
Distance			
Midpoint			



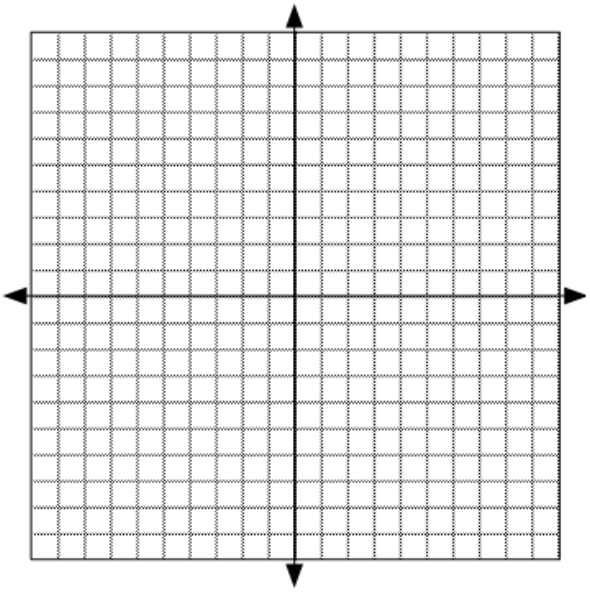
Problem 2...

On the graph below, plot and label these points: J (-6, 2) K (4, 2) L (-1, 7) M (-1, 2)

(1) Connect the points.

(2) Calculate the following (Be sure to show all of your work!):

	$\overline{JK}$	$\overline{JL}$	$\overline{KL}$
Slope			
Distance			
Midpoint			



What is special about point M? _____

_____

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 find the parallel and perpendicular slopes of a line?

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

Week 3, Lesson 2

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

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Parallel and Perpendicular Slopes

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-up

Warm Up:

Given point P(4,2) and point R(-3,-3), calculate the following:

1) the distance between P and R.

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

3) the midpoint between P and R.

GPE.4 Quiz!

TI-NSpire Activity

Parallel and Perpendicular Slopes

By the end of this activity, you should have the following data recorded in your IAN - LEFT SIDE

#1.1

Slope of $\overleftrightarrow{AB}$			
Slope of $\overleftrightarrow{GO}$			

I think that parallel means _____

_____

#1.2

Slope of $\overleftrightarrow{CH}$	Decimal: Fraction:	Decimal: Fraction:	Decimal: Fraction:
Slope of $\overleftrightarrow{PE}$	Decimal: Fraction:	Decimal: Fraction:	Decimal: Fraction:

I think that perpendicular means _____

_____

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)

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Right Side...

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 find the parallel and perpendicular slopes of a line?

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

Week 3, Lesson 3

1. Warm Up
2. Pre-Test problems
3. Notes
4. Practice
5. Closure

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Parallel and Perpendicular Slopes

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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-up

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) $\frac{1}{3}, \frac{1}{3}$

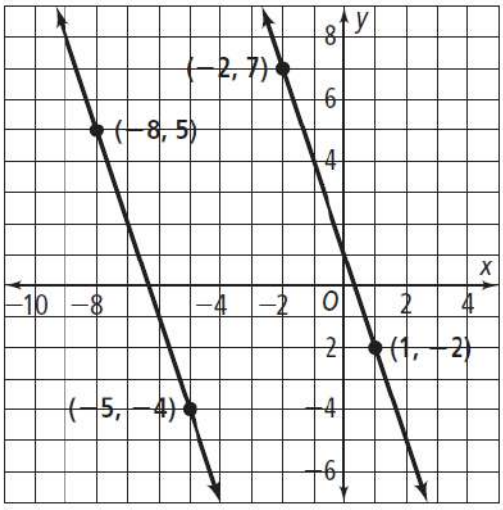
2. The lines shown in the figure at the right are

(F) parallel.

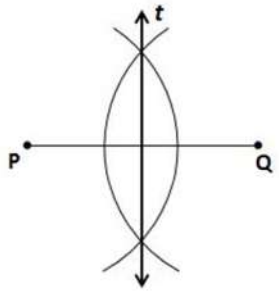
(G) perpendicular.

(H) neither parallel nor perpendicular.

(I) both parallel and perpendicular.



Which of the following best describes the purpose of the construction?



A. Line t is the perpendicular bisector of $\overline{PQ}$.

B. Line t is congruent to $\overline{PQ}$

C. $\overline{PQ}$ bisects line t

D. $\overline{PQ}$ is the perpendicular bisector of line t.

M is the midpoint of $\overline{CD}$. The coordinates $M(-1, 1)$ and $C(1, -3)$ are given. Find the coordinates of point D.

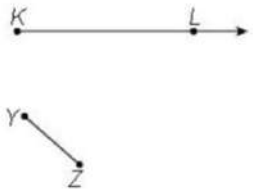
A. $(-3, 5)$

B. $(5, -3)$

C. $(0, -1)$

D. $(1, 2)$

Lucia wants to construct a segment congruent to $\overline{YZ}$ on $\overline{KL}$.



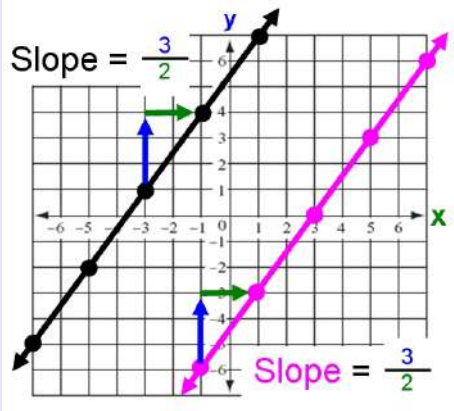
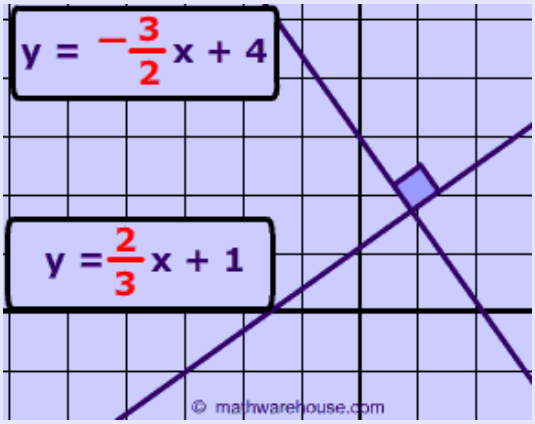
Which of the following is a valid method for constructing a segment congruent to $\overline{YZ}$?

A. Place the fixed end of the compass on Y and the other end of the compass on Z. Move the fixed end to point K and draw an arc that intersects the ray. The point of intersection and L are end points of a segment congruent to $\overline{YZ}$.

B. Place the fixed end of the compass on Z and the other end of the compass on Y. Move the fixed end to point K and draw an arc that intersects the ray. The point of intersection and L are end points of a segment congruent to $\overline{YZ}$.

C. Place the fixed end of the compass on Y and the other end of the compass on Z. Move the fixed end to point K and draw an arc that intersects the ray. The point of intersection and K are end points of a segment congruent to $\overline{YZ}$.

D. Place the fixed end of the compass on Z and the other end of the compass on Y. Move the fixed end to point L and draw an arc that intersects the ray. The point of intersection and K are end points of a segment congruent to $\overline{YZ}$.

Parallel Lines	Two lines that are parallel have the <u>same</u> slope 
Perpendicular Lines	- Two lines that are perpendicular have slopes that are <u>negative reciprocals</u>. (the product of their slopes is -1)  Ex: Given line c with a slope of -2, what is the slope of the line 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 <u>parallel</u> to that line

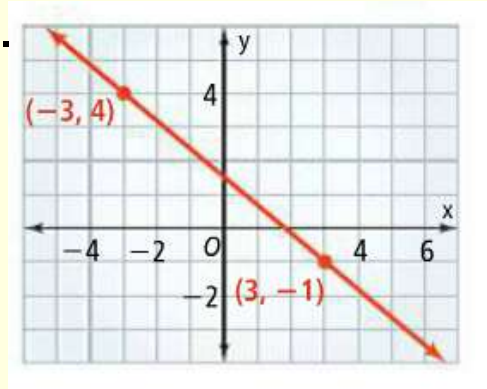
(c) write the slope of a line <u>perpendicular</u> to that line

1. $y = 3x + 1$

2. $y = -2/3x - 4$

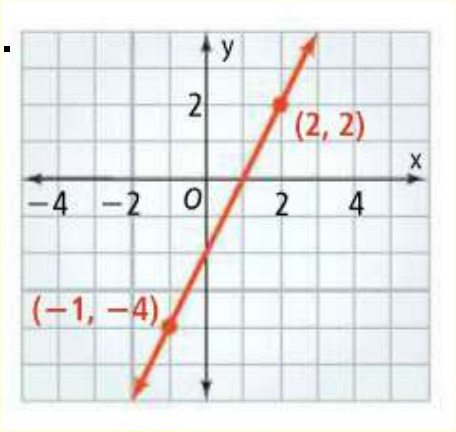
3. $y = 2 - 5/4x$

4.



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

5.



6. $2x + 3y = 6$

7. $4x - 2y = 8$

8. $5x - 3y = 30$

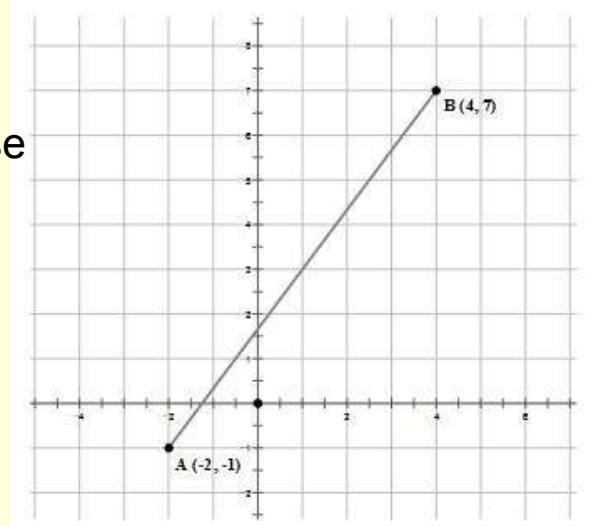
9. $x + 2y = 8$

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

Right Side...

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. Quiz: GPE.5
3. TI-NSpire activity
4. Closure

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Parallel Lines and the Transversal

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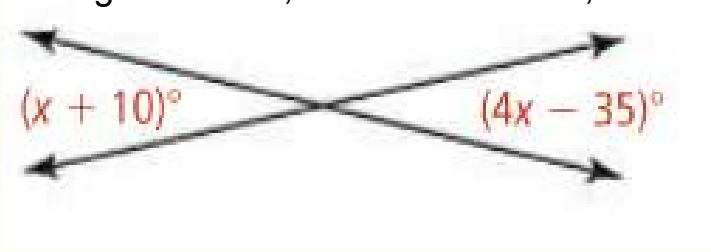
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

1. Given the diagram below, solve for x. Then, find the value of each angle.



2. Given the line 5y - 2x = 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.

GPE.5 Quiz

TI-NSpire Activity

Parallel Lines and Transversals

At the end of the activity, you should have the following data recorded on the left-side of your IAN:

#1.2

1 = 5 =

2 = 6 =

3 = 7 =

4 = 8 =

Observations: _____

_____

#2.1

1 = 5 =

2 = 6 =

3 = 7 =

4 = 8 =

Observations: _____

_____

#3.1

1 = 5 =

2 = 6 =

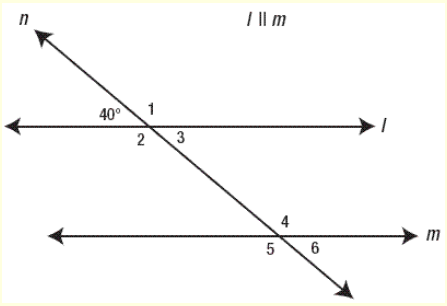
3 = 7 =

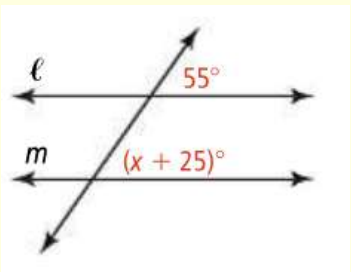
4 = 8 =

Extension

_____

_____





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Right Side...

Write a summary that answers the essential question.

Left Side...