EQ: G.CO.1 What are the principles of segment and angle addition?

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

Week 2, Lesson 1

1. Warm Up
2. TI-Nspire activity
3. Notes
4. practice
5. Closure

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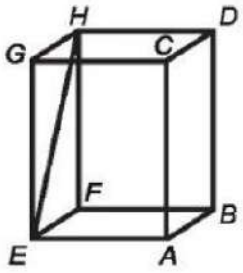
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

1. Which of the following 2 line segments are parallel to $\overline{AB}$?



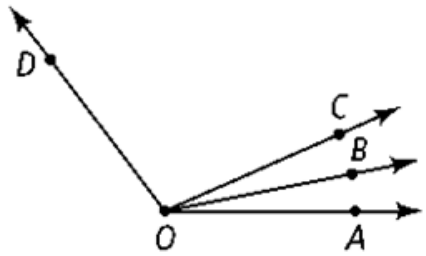
I. $\overline{GE}$

II. $\overline{HE}$

III. $\overline{GH}$

IV. $\overline{EF}$

2.



The $m\angle AOB = 4x - 1$; $m\angle BOC = 2x + 15$; $m\angle AOC = 32°$. Find the value of x and the measure of each angle.

TI-NSpire Activity:

Segment.Angle Addition

At the end of this activity, you should have the following data recorded in your lANs:

#1.1

$\overline{TU}$ =					
$\overline{UH}$ =					
$\overline{TH}$ =					

Sentence: _____

_____

#1.2

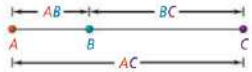
m∠FDR =					
m∠FDC =					
m∠CDR =					

Sentence: _____

_____

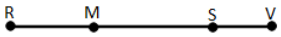
Segment Addition

If three points A, B, and C are collinear and B is between A and C, then $AB + BC = AC$.



Examples:

Given : RV = 28, RS = 22, SM = 15

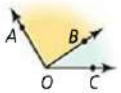


SV = _____ RM = _____ MV = _____

If $EG = 59$, what are EF and FG?

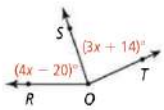
Angle Addition

If point B is in the interior of $\angle AOC$, then $m\angle AOB + m\angle BOC = m\angle AOC$.



Example:

If $m\angle RQT = 155$, what are $m\angle RQS$ and $m\angle TQS$?



Summary:

Name _____ pd ___ IAN.page 10

Segment/Angle Addition Practice

Point C is between points A and E. For each problem, draw a picture representing the three points and the information given. Then, solve for indicated length – Be sure to show each step!

1. If AC = 24 in. and CE = 13 in., AE = _____.

Picture:

Solve:

2. If CE = 7in. and AE = 23 in., AC = _____.

Picture:

Solve:

If U is between T and B, find the value of x and the measure of $\overline{TU}$.

(Hint: Draw a picture for each problem with the given information and then write the equation to solve.

3. TU = 5x - 2, UB = 3x + 1,

TB = 23

Picture:

Solve:

4. TU = 7x-1, UB = 4x - 8,

TB = 5x + 21

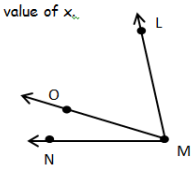
Picture:

Solve:

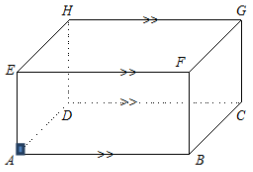
Use the given information to find the indicated angle measure.

5. If $m\angle NMO = (5x - 40)^\circ$ and $m\angle LMO = 70^\circ$ and $m\angle LMN = 85^\circ$. Find the value of x.

Show all of your steps.



Use the figure below to answer the following questions.

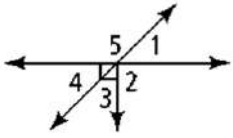


6. Identify a set of parallel lines. _____

7. Identify a set of perpendicular lines. _____

8. Identify a set of skew lines. _____

Use the figure below to answer the following questions.



9. Name an acute angle. _____

10. Name an obtuse angle. _____

11. Name two angles that are supplementary. _____

12. Name two angles that are complementary. _____

13. Name two vertical angles. _____

14. Name two adjacent angles. _____

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...

Draw your own picture to explain the segment addition principle.

EQ: How do I identify and explain basic Geometry vocabulary?

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

Week 2, Lesson 2

1. Warm Up
2. Review for Quiz
3. G.CO.1 Quiz
4. Closure

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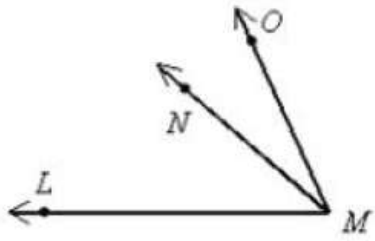
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

1. $m\angle OMN = (2x+9)^\circ$ and $m\angle LMN = (6x-7)^\circ$ and $m\angle OML = 66^\circ$. Find $m\angle OMN$ and $m\angle LMN$.



2. In the figure above, which of the following statements apply? (There may be more than one answer.)

(a) The two angles are complementary.

(b) The two angles are supplementary.

(c) The two angles are adjacent.

(d) The two angles form a linear pair.

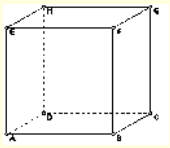
(e) The two angles are vertical angles.

(f) None of the statements apply.

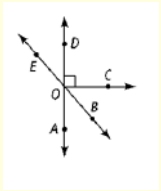
ICA: In Class Activity

Whiteboard Review!

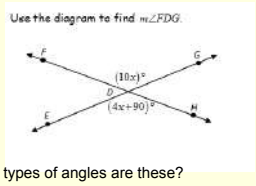
Name a set of segments that are:
- parallel to each other
- perpendicular to each other
- skew to each other



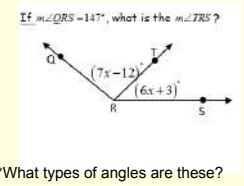
Name a pair of angles that are:
- adjacent
- complementary
- supplementary
- vertical
- linear pairs



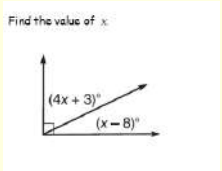
Name a:
- right angle
- an acute angle
- an obtuse angle
- a straight angle



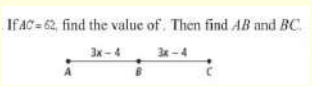
*What types of angles are these?

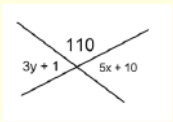


*What types of angles are these?



*What types of angles are these?





G.CO.1 Checkpoint Quiz!

EQ: G.CO.12 How do I perform basic geometric constructions?

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

Week 2, Lesson 3

1. Warm Up
2. Notes: Constructions
3. Practice
4. Closure

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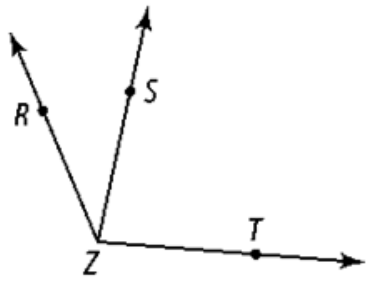
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

1. If $m\angle RZT = 110$, $m\angle RZS = 3s$, and $m\angle TZS = 8s$, what are $m\angle RZS$ and $m\angle TZS$?

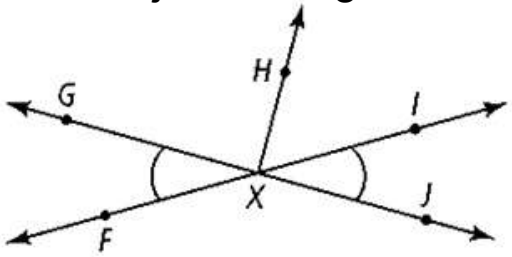


2. In the picture below, identify each of the following:

- two vertical angles

- a linear pair

- two adjacent angles

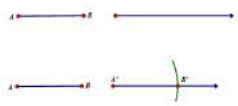


(1) Copying a segment

(a) Draw a segment on your paper.

(b) Using your compass, place the pointer at Point A and extend it until it reaches Point B. Your compass now has the measure of AB.

(c) Place your pointer at A', and then create the arc using your compass. The intersection is the same radii, thus the same distance as AB. You have copied the length AB.

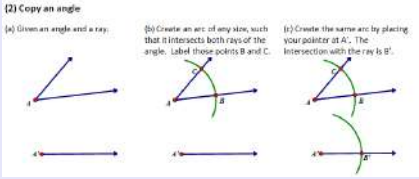


(2) Copy an angle

(a) Given an angle and a ray.

(b) Create an arc of any size, such that it intersects both rays of the angle. Label those points B and C.

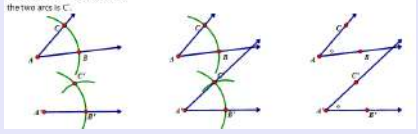
(c) Create the same arc by placing your pointer at A'. The intersection with the ray is B'.



(d) Place your compass at point B and measure the distance from B to C. Use that distance to make an arc from B'. The intersection of the two arcs is C'.

(e) Draw the ray $\overrightarrow{A'C'}$

(f) The angle has been copied.



*bisect - divide into two equal halves

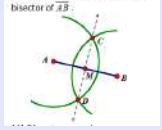
(3) Bisect a segment

(a) Given $\overline{AB}$

(b) Place your pointer at A, extend your compass so that the distance exceeds half way. Create an arc.

(c) Without changing your compass measurement, place your point at B and create the same arc. The two arcs will intersect. Label those points C and D.

(d) Place your straightedge on the paper so that it forms $\overline{CD}$. The intersection of $\overline{CD}$ and $\overline{AB}$ is the bisector of $\overline{AB}$.



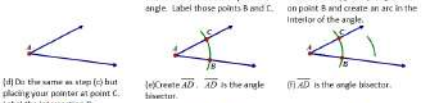
*What is the relationship between point M and AB?

(4) Bisect an angle

(a) Given an angle.

(b) Create an arc of any size, such that it intersects both rays of the angle. Label those points B and C.

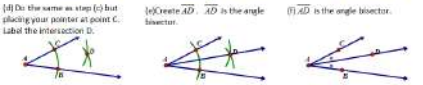
(c) Leaving the compass the same measurement, place your pointer on point B and create an arc in the interior of the angle.



(d) Do the same as step (c) but placing your pointer at point C. Label the intersection D.

(e) Create $\overrightarrow{AD}$. $\overrightarrow{AD}$ is the angle bisector.

(f) $\overrightarrow{AD}$ is the angle bisector.

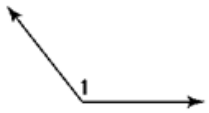


Summary:

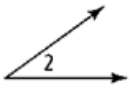
Name _____ pd ____ IAN. page 14

1. Construct $\overline{AB}$ congruent to $\overline{XY}$.

2. Construct an angle congruent to $\angle 1$.

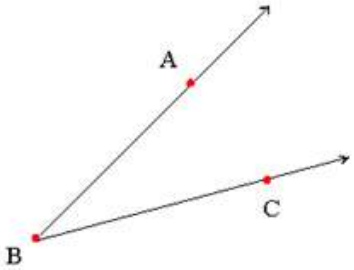


3. Construct an angle congruent to $\angle 2$.



4. Construct the perpendicular bisector of $\overline{XY}$.

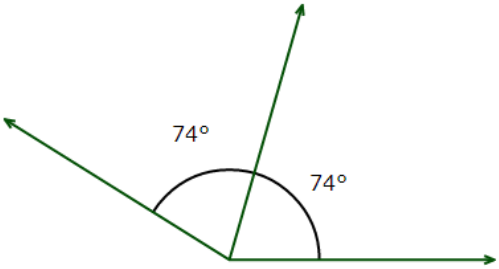
5. Construct the angle bisectors for the following two angles

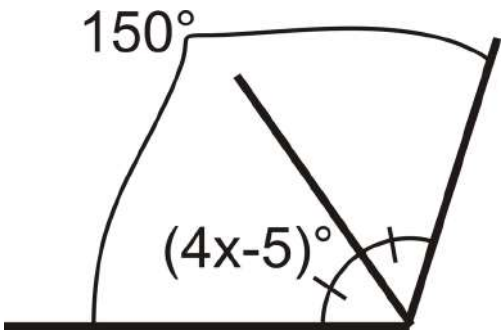


Whiteboard Practice!

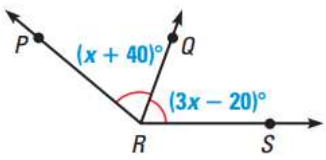
An angle is bisected, forming two new angles. If the original angle had a measure of 20°, what is the measure of each new angle?

An angle is bisected, forming two new angles. Each new angle has a measure of 74°. What was the measure of the original angle?





*How do you know you have an angle bisector?



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...

In your own words, explain how to construct ONE of the following:

- a congruent angle
- an angle bisector
- a perpendicular bisector

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

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

Week 2, Lesson 4

1. Warm Up
2. Notes
3. TI-NSpire activity
4. Practice
5. Closure

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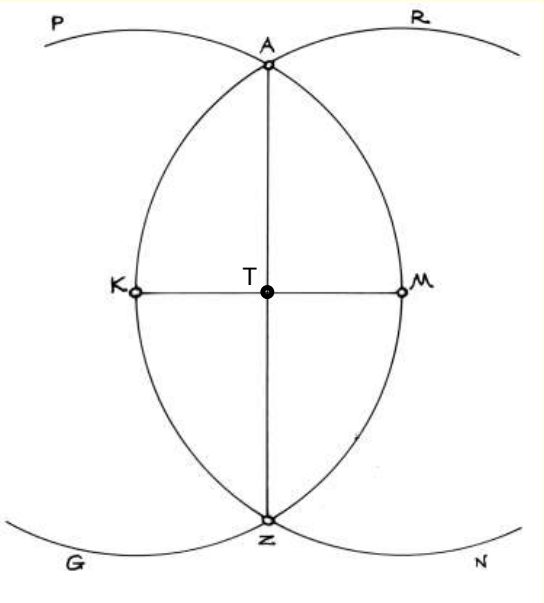
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

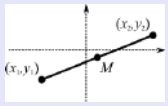
1. Which construction is shown at the right?



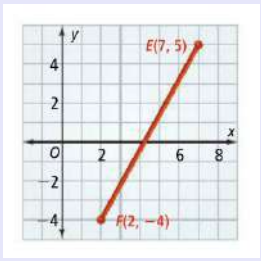
2. If KT = 3x + 3 and MT = 2x + 9, what is the value of x and the length of each segment?

Midpoint Formula

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

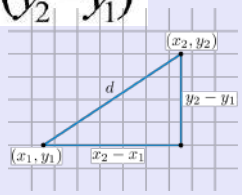


Example 1

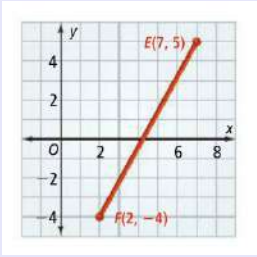


Distance Formula

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



Example 2

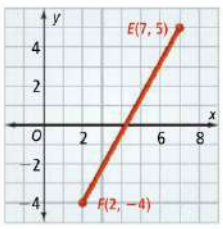


Slope Formula

The steepness of a line

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

Example 3



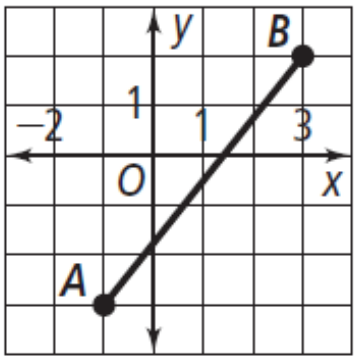
Summary:

TI-NSpire Activity

Distance, Midpoint, Slopes

Extra practice...

Calculate the distance, midpoint, and slope for the following segment.



Right Side...

Write a summary that answers the essential question.

Left Side...

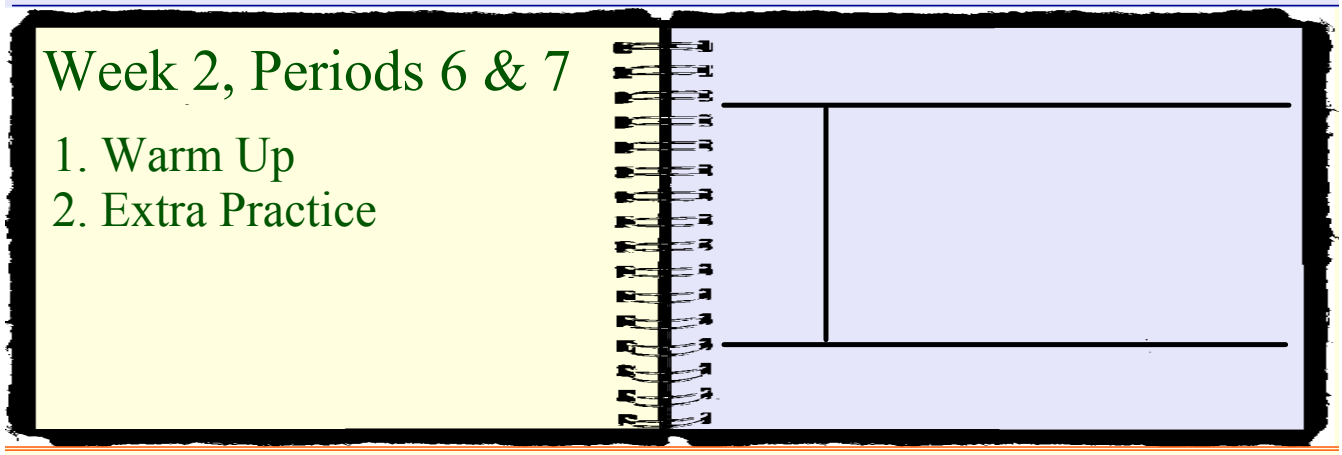
Pick any ONE of the following and explain - using your own words - how to calculate it:

- distance between two points
- midpoint between two points
- the slope of a line

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

Week 2, Periods 6 & 7

1. Warm Up
2. Extra Practice



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:

On a piece of paper, please complete the following:

$\overline{BD}$ bisects $\angle ABC$.

1) Draw a picture and label all parts.

2) If $m\angle ABD = 5x$ and $m\angle DBC = 3x+10$,
find the value of x and the measure of $\angle ABC$

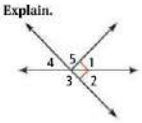
On that same piece of paper...

Sketch each figure.

54. $\overleftrightarrow{GH}$ **55.** $\overline{CD}$ **56.** $\overrightarrow{AB}$

57. acute $\angle ABC$ **58.** right $\angle PST$ **59.** straight $\angle XYZ$

Use the diagram at the right. Is each statement true? Explain.



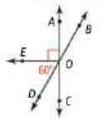
7. $\angle 1$ and $\angle 5$ are adjacent angles.

8. $\angle 3$ and $\angle 5$ are vertical angles.

9. $\angle 3$ and $\angle 4$ are complementary.

10. $\angle 1$ and $\angle 2$ are supplementary.

Name an angle or angles in the diagram described by each of the following.



11. supplementary to $\angle AOD$

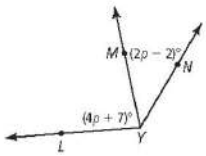
12. adjacent and congruent to $\angle AOE$

13. supplementary to $\angle EOA$

14. complementary to $\angle BOD$

15. a pair of vertical angles

If $m\angle LYN = 125$, what are $m\angle LYM$ and $m\angle MYN$?



C is the midpoint of $\overline{BE}$. If $BC = t + 1$, and $CE = 15 - t$, what is BE?

Draw an obtuse angle. Name it TOU.

Construct a copy of your angle.

Construct the angle bisector of the angle you copied.

Draw a segment. Label it CV.

Draw a copy of the segment.

Draw the perpendicular bisector of the segment you copied.