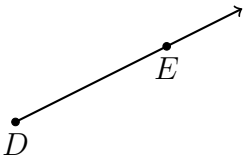
BECA / Dr. Huson / Geometry 10th Grade Name: .
Unit 1: Introduction to Geometry

Quiz Corrections 1.4: Correct Friday's Do Now Quiz, complete this review, and staple them together. Due tomorrow for one-half of your missed points.

1. The points where a line segment begins and ends are the _____.
2. A(n) _____ is a portion of a line that includes two points and all of the collinear points between the two points.
3. A(n) _____ is a portion of a line that begins with a single point and extends infinitely in one direction.
4. Points that are all located on the same line are _____.
5. Two or more line segments of equal measure are _____.
6. A flat surface is a(n) _____.
7. A(n) _____ is a straight continuous arrangement of an infinite number of points.
8. Use symbols to write the name of each geometric figure.

(a)



(b)

(c)

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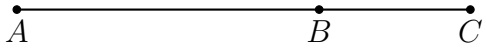
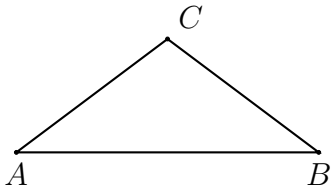
Do Now 1.4: Notation and terminology

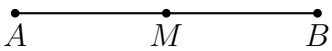
1. I have a compass, ruler, protractor, notebook, and folder (circle one). Yes No
2. Use each term according to its geometric meaning: "sketch", "draw", "construct".
   (a) _____ is to make a freehand diagram showing important features.
   (b) _____ is to depict with accurate measures using ruler, protractor, and compass.
   (c) _____ is a formal, logical process to create geometric figures using only a straightedge and compass.
3. Two or more line segments of equal measure are _____.
4. Given $\overline{ABC}$, $AB = 10$, and $BC = 4$.
   (a) Find AC.



   (b) The postulate used in this problem is the _____.
5. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. On the diagram mark the congruent line segments with tick marks.



6. Given line segment $\overline{AB}$ with midpoint M, that is, $\overline{AM} \cong \overline{BM}$. $AM = 2$ cm. Find the length of $\overline{AB}$.



7. Points that are all located on the same line are _____.
8. Find the value of $|8.5 - 3|$.

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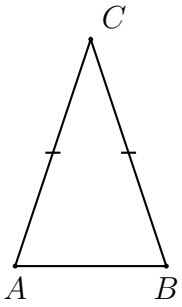
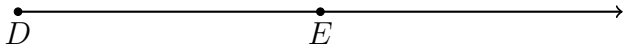
9. Given the points X and Y, draw $\overrightarrow{YX}$.

10. Given $\triangle ABC$ write down two congruent line segments using proper notation.



11. Given $\overrightarrow{DE}$, construct circle E with radius DE.



Spicy: Complete the construction of an equilateral triangle with one side $\overline{DE}$.

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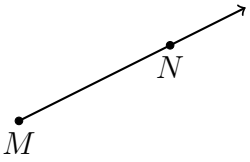
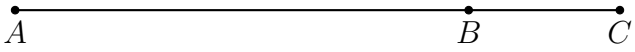
Homework 1.4: Geometric diagrams

1. A flat surface is a(n) _____.

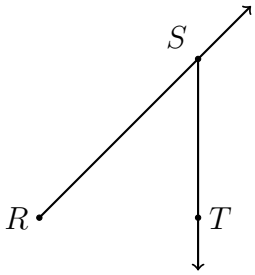
2. Use symbols to write the name of the given figure.



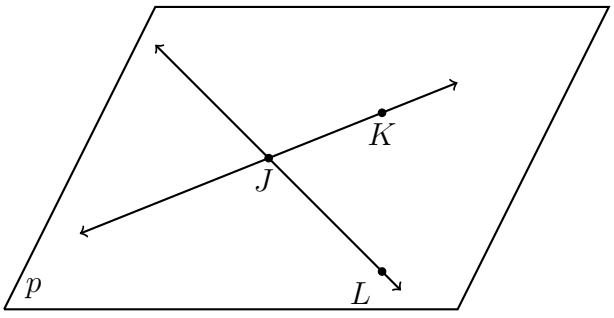
3. Given $\overline{ABC}$, $AB = 2x + 1$, $BC = x - 1$, and $AC = 9$. Find AB.



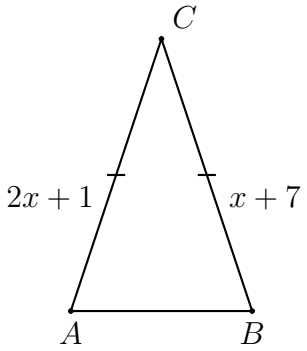
4. Write down the name of two line segments shown in the diagram below using proper geometric notation.



5. Identify two lines in the given plane.



6. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. $AC = x + 7$ and $BC = 2x + 1$. Find AC.

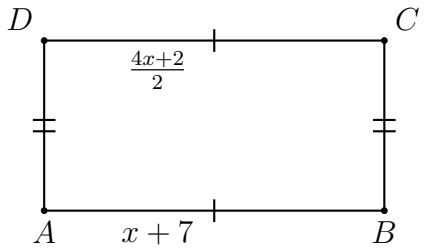


7. _____ is to make a freehand diagram showing important features.

8. Given $A(4, 3)$ and $B(6, 4)$. What is the slope of $\overleftrightarrow{AB}$? Use the formula $m = \dfrac{y_2 - y_1}{x_2 - x_1}$.

9. Points that are all located on the same line are _____.

10. Spicy: Given the rectangle $ABCD$ with $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$. $AB = x + 7$ and $CD = \dfrac{4x + 2}{2}$. Find AB.



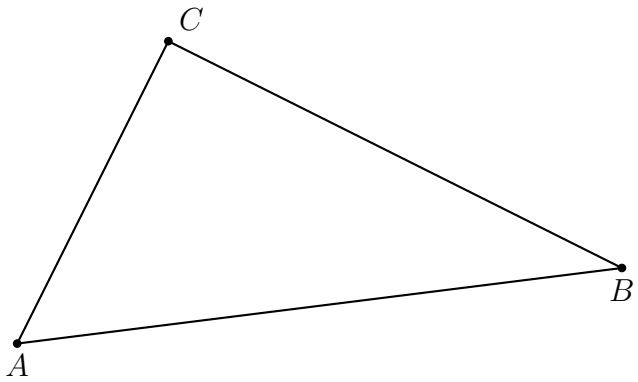
Do Now 1.5: Plane geometry, measure lengths

1. Accurately measure the length of each side of $\triangle ABC$ in centimeters (cm) to the nearest tenth.

   (a) $AB =$ _____

   (b) $BC =$ _____

   (c) $AC =$ _____



2. Draw a figure for each description. Draw the line or segment and label all points mentioned in the description.

   (a) The line segment XY such that the distance between points X and Y is 6 cm.

   (b) Points A, D, and X are collinear such that point A is located halfway between points D and X. (hint: mark the congruent segments with tick marks)

   (c) Points A, B, and C are collinear such that point B is between points A and C and the distance between points A and B is twice the distance between points B and C.

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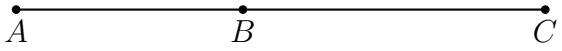
Homework 1.5: Segment addition. Reminder construction project due tomorrow

1. Given $\overline{ABC}$, $AB = 4x - 9$, $BC = x + 11$, $AC = 22$. Find AB. Show each step:



(a) Sketch and label the situation

(b) Write a geometric equation

Segment addition postulate

(c) Substitute algebraic values

(d) Solve for the unknown

$x =$ _____

(e) Answer the question

$AB =$ _____

(f) Check your answer

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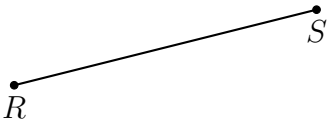
Do Now Quiz 1.6: Notation, segment addition algebra

1. Points that are all located on the same line are _____.

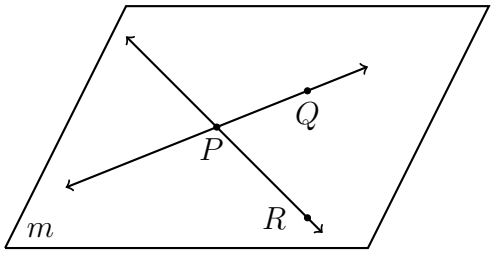
2. Use symbols to write the name of the given figure.



3. Draw and label a line segment AB such that the distance between points A and B is 8 cm.

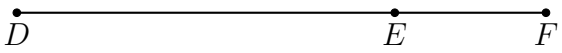
4. Find the value of $|2 - 7|$.

5. Identify three points in the given plane.

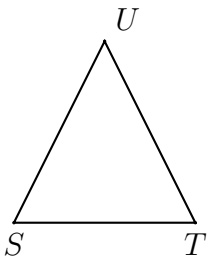


6. Given $M(2, 3)$ and $N(5, 9)$. What is the slope of $\overleftrightarrow{MN}$? Use the formula $m = \dfrac{y_2 - y_1}{x_2 - x_1}$.

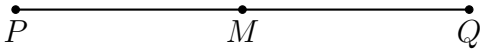
7. Given $\overline{DEF}$, $DE = 10$, and $EF = 3$. Find DF.



8. Given $\triangle STU$ with $\overline{SU} \cong \overline{TU}$. On the diagram mark the congruent line segments with tick marks.



9. Given line segment $\overline{PQ}$ with midpoint M, that is, $\overline{PM} \cong \overline{QM}$. $PQ = 14$ cm. Find the length of $\overline{MQ}$.



10. Given the points J and K, draw $\overrightarrow{JK}$.

11. Given $\overline{ABC}$, $AB = x + 1$, $BC = 3x - 1$, and $AC = 8$. Find AB.

Homework 1.6: Angle notation

1. Write the appropriate name for the type of angle depending on its measure in degrees. (acute, right, obtuse, or straight)

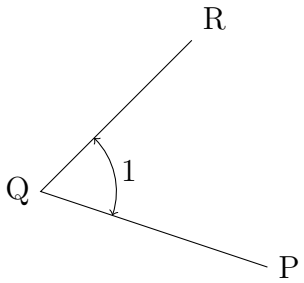
   (a) $m\angle = 90$: _____

   (b) $90 < m\angle < 180$: _____

   (c) $0 < m\angle < 90$: _____

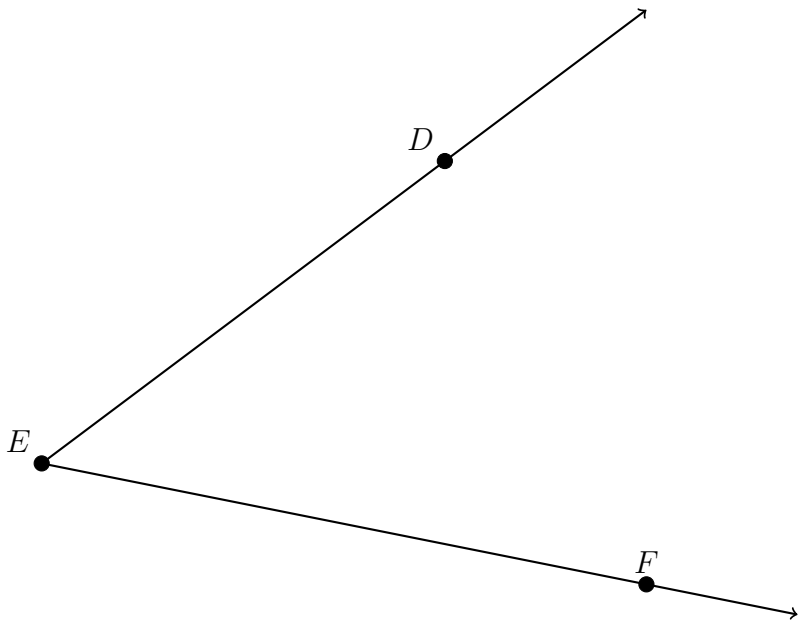
   (d) $m\angle = 180$: _____

2. Write down the name of the given angle three different ways.



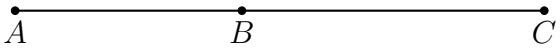
3. Points that are all located on the same plane are _____.

4. Write down the name of the angle shown in the diagram below using proper geometric notation.



   Find the measure of the angle in degrees with a protractor.

5. Given $\overline{ABC}$, $AB = 3x - 2$, $BC = x + 11$, $AC = 29$. Find AB. Show each step:



(a) Sketch and label the situation

(b) Write a geometric equation:

(c) Substitute algebraic values and solve:

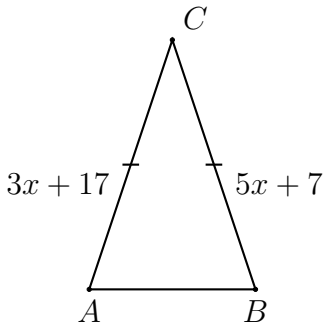
$x =$ _____

(d) Answer the question

$AB =$ _____

(e) Check your answer

6. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. $AC = 5x + 7$ and $BC = 3x + 17$. Find AC.



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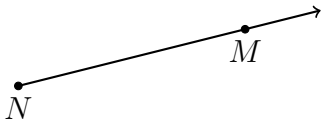
Quiz Corrections 1.6: Correct Friday's Do Now Quiz, complete this review, and staple them together. Due tomorrow for one-half of your missed points.

1. Segments of the same length, or angles having the same measure, are _____.

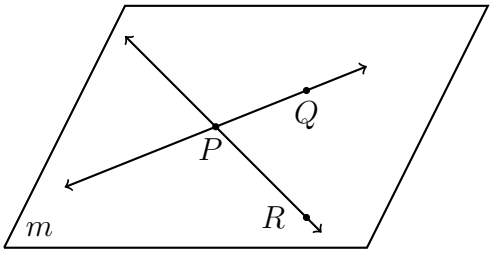
2. Use symbols to write the name of the given figure.



3. Draw and label a line segment AB such that the distance between points A and B is 6 cm.

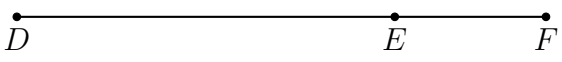
4. Find the value of $|11 - 4| + | - 3|$.

5. Identify two rays in the given plane.

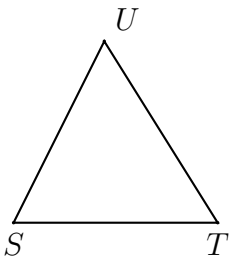


6. Given $T(7, 4)$ and $U(5, 8)$. What is the slope of $\overleftrightarrow{TU}$? Use the formula $m = \dfrac{y_U - y_T}{x_U - x_T}$.

7. Given $\overline{DEF}$, $DE = 4.5$, and $EF = 1.5$. Find DF.



8. Given $\triangle STU$ with $\overline{SU} \cong \overline{ST}$. On the diagram mark the congruent line segments with tick marks.



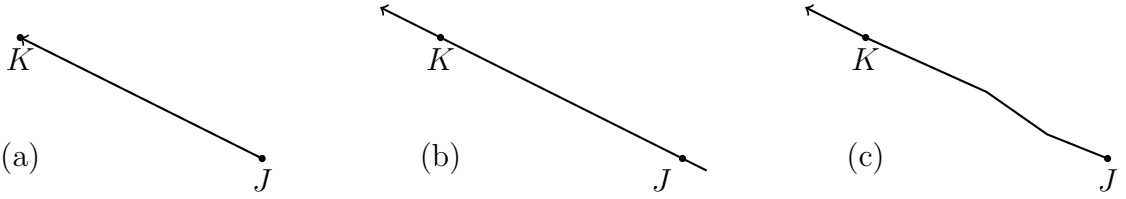
9. Given line segment $\overline{PQ}$ with midpoint M, that is, $\overline{PM} \cong \overline{QM}$. $PQ = 20$ cm. Find the length of $\overline{MQ}$.

10. Given the points G and H, draw $\overleftrightarrow{GH}$.

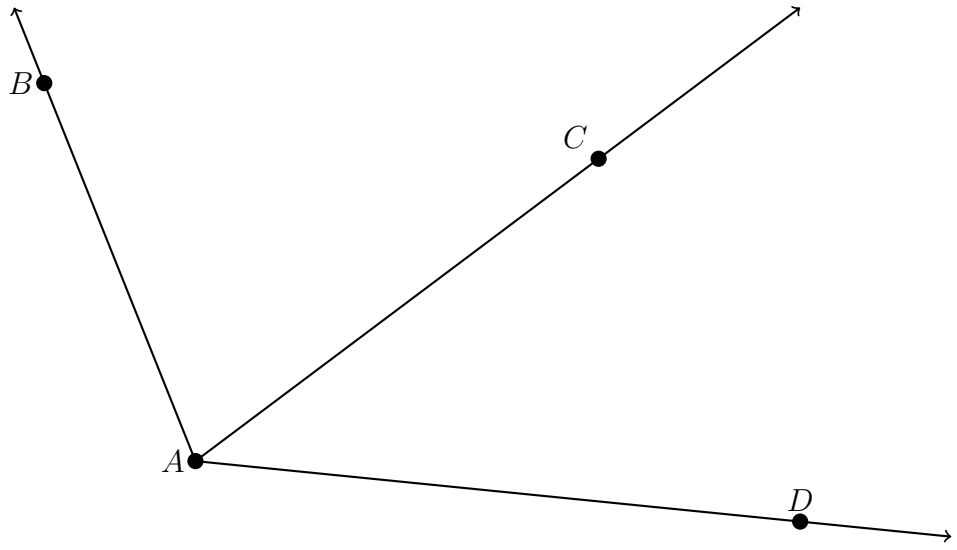
11. Given $\overline{ABC}$, $AB = x + 8$, $BC = 2x - 5$, and $AC = 63$. Find AB.

Do Now 1.7: Angle measures

1. For each example, explain the error made drawing $\overrightarrow{JK}$.
.



2. Write down the name of the *three* angles shown in the diagram below and their angle measures, using your protractor.



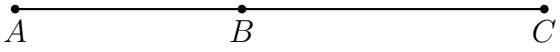
(a) _____

(b) _____

(c) _____

3. Given $\overline{ABC}$, $AB = 5x - 12$, $BC = x + 4$, $AC = 10$. Find BC.

   (a) Sketch and label the situation



   (b) Write a geometric equation: _____

   (c) Substitute algebraic values: _____

   (d) Solve for x

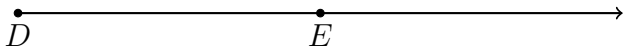
$x =$ _____

   (e) Answer the question: Find BC by substituting for x.

$BC = (\qquad) + 4 =$ _____

   (f) Check your answer

4. Given $\overrightarrow{DE}$, construct circle E with radius DE.



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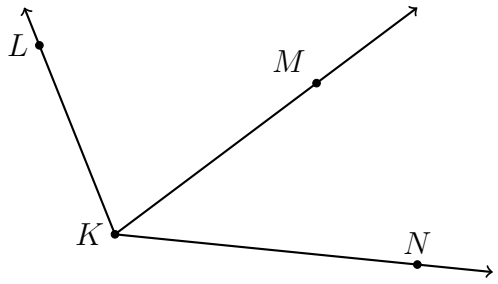
Homework 1.7: Angle addition postulate

1. Given $m\angle LKM = 3x$, $m\angle MKN = x + 20$, and $m\angle LKN = 100$, find $m\angle MKN$.

   (a) Sketch and label the situation



   (b) Write a geometric equation: _____

   (c) Substitute algebraic values: _____

   (d) Solve for x

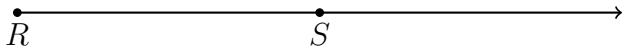
$$x = \_\_\_\_$$

   (e) Answer the question: Find $m\angle MKN$ by substituting for x.

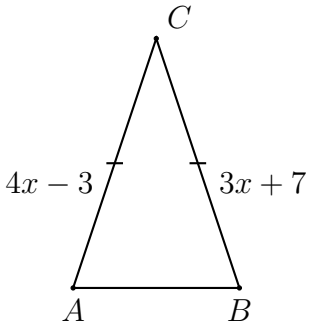
$$m\angle MKN = (\qquad) + 20 = \_\_\_\_$$

   (f) Check your answer

2. Given $\overrightarrow{RS}$, construct circle S with radius RS.
   Spicy: Complete the construction of an equilateral triangle with one side $\overline{RS}$.



3. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. $AC = 4x - 3$ and $BC = 3x + 7$. Find AC.



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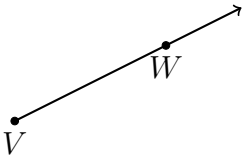
Unit 1: Introduction to Geometry

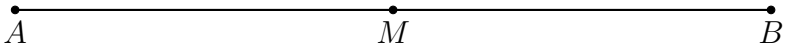
Do Now 1.8: Bisector and midpoint problems

1. Use symbols to write the name of the given figure.



2. A(n) _____ is a portion of a line that begins with a single point and extends infinitely in one direction.

3. Given line segment $\overline{AB}$ with midpoint M, that is, $\overline{AM} \cong \overline{BM}$. $AM = 5$ cm. Find AB.



4. Given collinear points P, Q, R with Q bisecting the line segment $\overline{PR}$. $PQ = 3x - 12$ and $QR = x + 6$. Find the length of $\overline{QR}$.
First label the drawing.

   (a) Write a geometric equation: _____

   (b) Substitute algebraic values: _____

   (c) Solve for x

   (d) Answer the question:

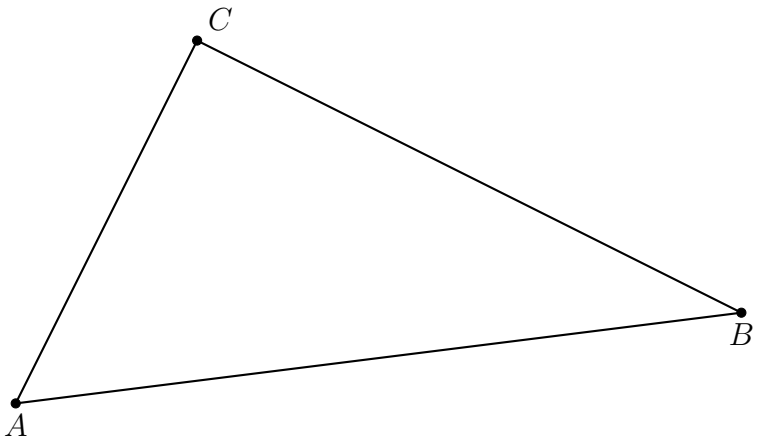
   (e) Check your answer

5. Given $\triangle ABC$ accurately measure the two sides in centimeters (cm) to the nearest tenth and $m\angle B$ in degrees.

   (a) $AB =$ _____

   (b) $BC =$ _____

   (c) $m\angle ABC =$ _____



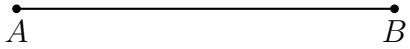
6. Complete the construction of an equilateral triangle.

   (a) Construct circle A with radius AB.

   (b) Construct circle B with radius AB.

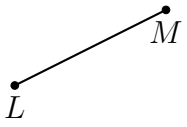
   (c) Label the intersection C of the two circles.

   (d) Draw line segments $\overline{AC}$ and $\overline{BC}$

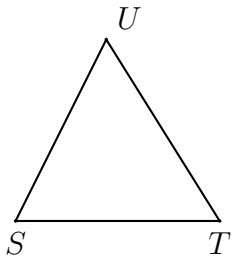


Do Now 1.8: Test review warmup problems

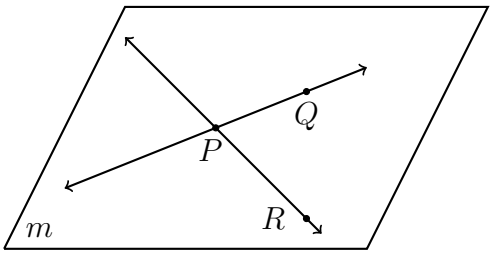
1. Use symbols to write the name of the given figure.



2. Given $\triangle STU$ with $\overline{ST} \cong \overline{TU}$. On the diagram mark the congruent line segments with tick marks.



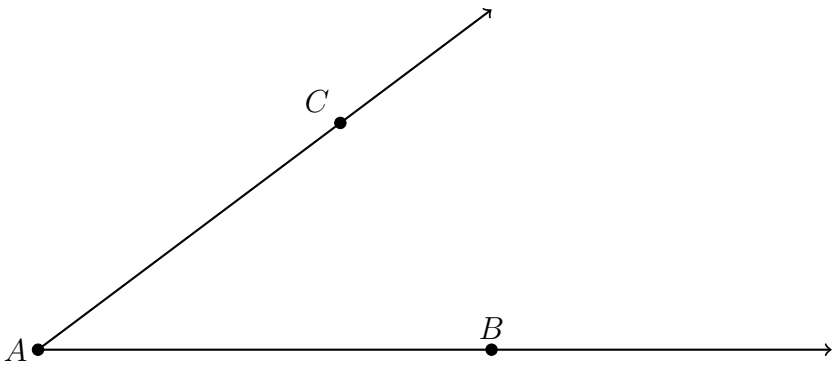
3. Identify two line segments in the given plane.



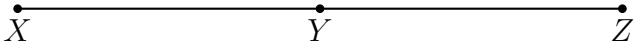
4. Find the measure of the angle in degrees and the given segment's length in centimeters.

   (a) $m\angle CAB =$ _____

   (b) $AB =$ _____

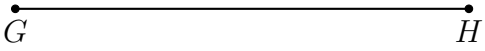


5. Given line segment $\overline{XZ}$ with bisector Y. $YZ = 4.2$ cm. Find XY.



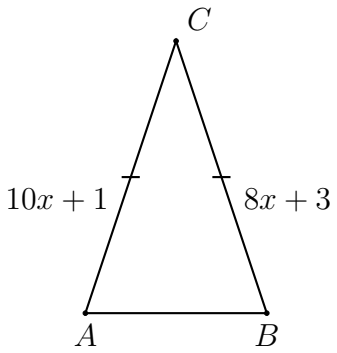
6. Absolute value: Find the value of $|7 - 9| + | - 3 - 1|$.

7. Complete the construction of an equilateral triangle and fill in the blanks of the steps.
   (a) Given the line segment $\overline{GH}$.
   (b) Construct circle G with radius _____.
   (c) Construct circle _____ with radius _____.
   (d) Label the intersection J of the two circles.
   (e) Draw line segments _____ and _____
   (f) $\triangle GHJ$ is equilateral.



Homework 2.0: Weekend decompress

1. Given $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$. $AC = 10x + 1$ and $BC = 8x + 3$. Find AC.



2. Spicy: Given the rectangle $ABCD$ with $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$. $AB = 4x + \frac{3}{4}$ and $CD = \dfrac{7x + 5}{2}$. Find AB.