Geometry Unit 1: Extra slides for Segments, Length, and Area Bronx Early College Academy

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Extra 1.1 Isosceles triangle solving for length

Extra: Sketch, draw, construct definitions

Extra: Circle definition

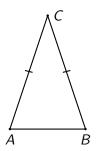
Extra Trisect line segment

Extra: Segment addition

Diagrams and notation

What is shown in the diagram? Mark all that apply.

- 1. A rectangle
- 2. An equilateral triangle
- 3. An isosceles triangle
- 4. A triangle that is neither isosceles nor equilateral



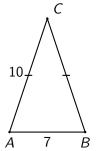
Isosceles triangle solving for length

Do Now: Given \overline{RST} , $RS = 3\frac{2}{3}$, and $RT = 9\frac{1}{3}$. Find ST.

Isosceles triangle perimeter

Find the perimeter of the isosceles $\triangle ABC$, given $\overline{AC}\cong \overline{BC}$, AB=7, and AC=10

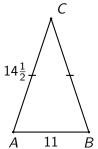
Show your work with an equation for full credit.



Isosceles triangle perimeter

Find the perimeter of the isosceles $\triangle ABC$, given $\overline{AC}\cong \overline{BC}$, AB=11, and $AC=14\frac{1}{2}$

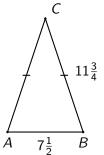
Show your work with an equation for full credit.



Isosceles triangle perimeter

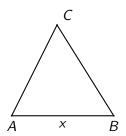
Find the perimeter of the isosceles $\triangle ABC$, given $\overline{AC}\cong \overline{BC}$, $AB=7\frac{1}{2}$, and $BC=11\frac{3}{4}$

Show your work with an equation for full credit.



Equilateral triangle

Given equilateral $\triangle ABC$ having perimeter of 21. Find the length of side \overline{AB} , x.



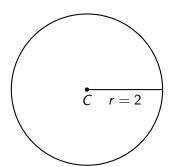
Formal meanings of sketch, draw, and construct

- Sketch is to make a freehand diagram of important features.
 Use a pencil to write carefully in your notebook or on paper.
- Draw is to depict with accurate measures using ruler, protractor, and compass.
 For example, draw a diagram of your room.
- 3. *Construct* is a formal, logical process to create geometric figures using only a straightedge and compass.
- 4. Drawn to *scale* means that all of the lengths are proportional. (e.g. a "scale model")
 - Tests will often warn that diagrams are "not drawn to scale"

Definition of a circle in a plane

A circle is defined by its center point and radius r as all the points with distance r to the center.

Shown below circle C, radius = 2

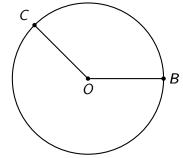


Note: All of the radii of a circle are congruent.

Circle diagrams and notation

In circle O, which radius is longer? \overline{OB} or \overline{OC}

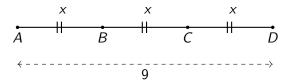
- 1. OB > OC
- 2. *OB* < *OC*
- 3. OB = OC



Definition: Trisection of a line segment

Two points *trisect* a line segment if they divide it into three congruent segments

Given \overline{ABCD} with trisecting points B and C. If AD = 9, find x.



Segment trisection

The points Q and R trisect the line segment \overline{PS} . $PS = 13\frac{1}{2}$.

- 1. Mark and label the approximate locations of Q and R.
- 2. Find PQ. State an equation for full credit.



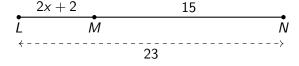
Segment trisection, find endpoint (spicy)

Given the points S and T trisect the line segment \overline{RU} , as shown below. If SU=6, find RU.

$$\frac{\cdot}{R}$$
 $\frac{\parallel}{S}$ $\frac{\cdot}{T}$ $\frac{\parallel}{U}$

Applying the segment addition postulate

Given \overline{LMN} , LM = 2x + 2, MN = 15, LN = 23. Find x.



- 1. Write down an equation to represent the situation.
- 2. Solve for x.

3. Check your answer.

Find endpoint given bisector (spicy)

Given S(1) and T(3), as shown on the number line.

Find point U given that point T bisects \overline{SU} . Plot and label U on the number line.

