G.SRT.8 How do I apply the Pythagorean Theorem?

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

Week 14, Lesson 1

1. Warm Up
2. Practice
3. Study Guide

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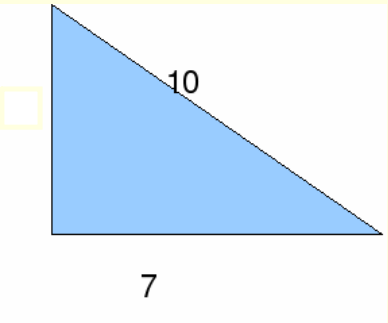
Applying Pythagorean Theorem

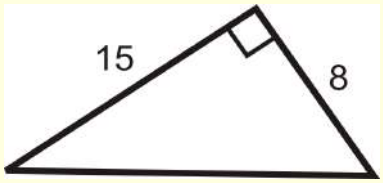
81

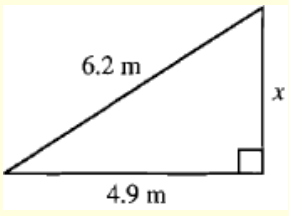
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up

Warm Up:

For each of the triangles below,
(a) Redraw the triangle in your notebook.
(b) Label the legs and the hypotenuse.
(c) Solve for the missing side.







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Pythagorean Theorem Practice

1. For each of the following, calculate the value of c.

a = 3, b = 4, c = ___ a = 5, b = 12, c = ____ a = 8, b = 15, c = ____

We call these three sets Pythagorean Triples, because a, b, and c are all whole numbers.

2. For each of the following sets of coordinates,

(a) Graph both points.

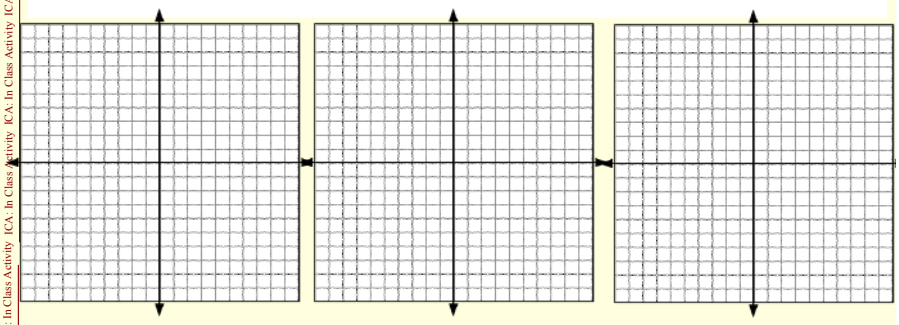
(b) Use the distance formula to calculate the distance between the two.

(c) Use the Pythagorean Theorem to find the distance.

A (-1, -2) and V (3,6) T (5,-4) and R (-2,1) F (2,2) and Q (-5,-5)

Distance formula: **Distance formula:** **Distance formula:**

Pythagorean Theorem: **Pythagorean Theorem:** **Pythagorean Theorem:**



3. **Diego places a ladder on level ground against a vertical wall. When the base of the ladder is 10 feet from the wall, the ladder reaches a height of 7 feet along the wall.**

(a) Draw a picture to represent this scenario.

(b) Calculate the height of the wall.

(c) If Diego moves the base of the ladder 3 feet closer to the wall, how high up the wall does the ladder now reach?

4. **A piece of square fabric has a side length of 10 inches.**

(a) You are making a quilt and want to put lace along the diagonal of this fabric. How much lace will you need for one piece of fabric?

(b) Lace is sold in feet. If there are 12 inches in a foot, how many feet of lace will you need per one square of fabric?

(c) Your quilt will have 15 of these pieces of fabric. How much total lace will you need?

(d) If lace costs $1.20 per foot, how much can you expect to pay?

5. **To avoid a large oil slick, a ship had to sail around it by traveling 18 miles east and then 9 miles north.**

(a) Calculate the distance from its starting point to its ending point if it could have taken a direct route. Round your answer to the nearest tenth of a mile.

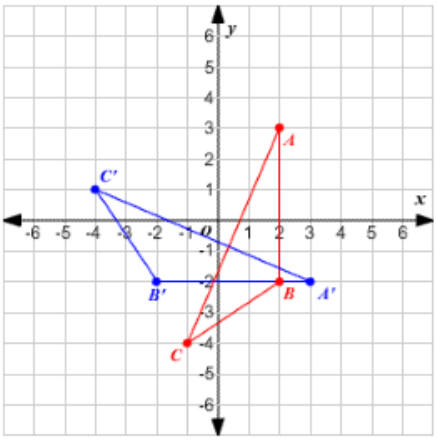
(b) How many less miles would the ship have traveled if it had taken the direct route?

(c) If the captain and crew get paid by the mile at an average of $45/mile, how much less money would they have earned going to the direct route?

Geometry 1: Triangle Congruence Unit Review

G-CO.7. Learning Target: *I can show that two triangles are congruent through rigid motions if and only if the corresponding pairs of sides and corresponding pairs of angles are congruent.*

1. Given that $\triangle A'B'C'$ is a rotation of $\triangle ABC$



(a) Are the two triangles congruent? Explain why or why not.

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G-CO.8. Learning Target: *I can explain which series of angles and sides are essential in order to show congruence through rigid motions*

2. For each of the following pairs of triangles, explain why they are congruent.

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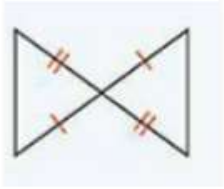

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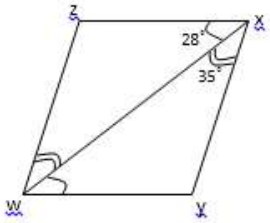

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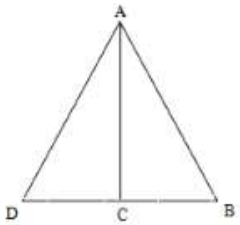
(c) $\overline{AC}$ is the perpendicular bisector of $\overline{DB}$.



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If $\angle D = 40°$, find the measurement of $\angle DAB$.

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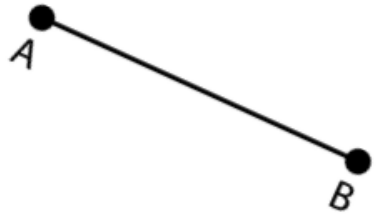
3. (a) Given the following segment $\overline{AB}$, construct its perpendicular bisector. Label your bisector $\overline{HG}$. Label the intersection of $\overline{AB}$ and $\overline{HG}$ point R.



(b). Using your construction, explain how any point on $\overline{HG}$ is equidistant from A and B.

(c) Given the following diagram, fill in the reasons for the following proof.

Given: $\overline{PM}$ is the perpendicular bisector of $\overline{XY}$
Prove: $\overline{PX} \cong \overline{PY}$

Statements	Reasons
1. $\overline{PM}$ is the perpendicular bisector of $\overline{XY}$	1.
2. $\overline{XM} \cong \overline{YM}$	2.
3. $\angle PMX \cong \angle PMY$	3.
4. $\overline{PM} \cong \overline{PM}$	4.
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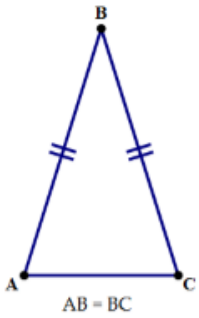
6. $\overline{PX} \cong \overline{PY}$	6.

G-CO.10. Learning Target: *I can prove the following theorems in narrative paragraphs, flow diagrams, in two-column format, and/or using diagrams without words: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the medians of a triangle meet at a point.*

4. Given the following isosceles triangle,



(a) Construct the midpoint of $\overline{AC}$. Label it P.

(b) Is $\triangle ABP \cong \triangle CBP$? Why or why not?

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(c) Is $\angle A \cong \angle C$? Why or why not?

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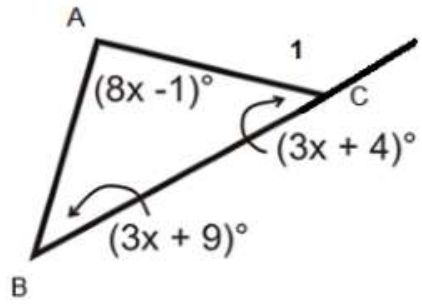
5. Given the triangle below, find the value of x and the measurement of each angle.



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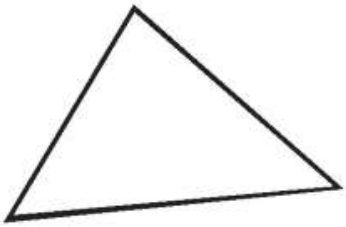

(b) Using your construction, define a centroid and explain its characteristics.

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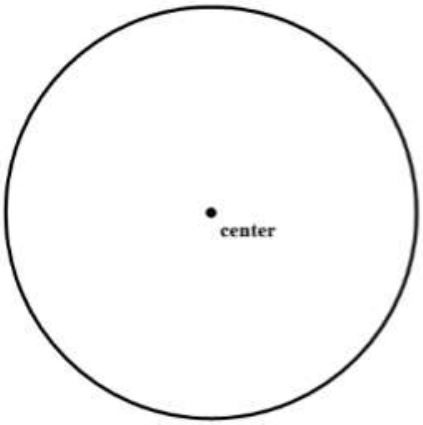
G.CO-13. Learning Target: *I can make the following formal constructions using a variety of tools: an equilateral triangle inscribed in a circle.*

7. Construct an equilateral triangle inscribed in a circle. Leave all your construction marks.



G-SRT.5. Learning Target:*I can prove relationships in geometric figures using congruence criteria for triangles.*

8. If $\triangle ABC \cong \triangle CDA$, which of the following must be true? (Circle all that apply.)

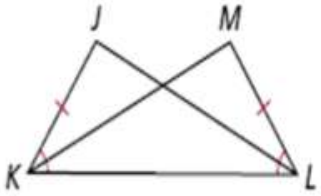
a. $\overline{AB} \cong \overline{CA}$

b. $\overline{BC} \cong \overline{DA}$

c. $\angle CAB \cong \angle ACD$

d. $\angle ABC \cong \angle CAD$

9. Given the following diagram, which of the following statements must be true? (Circle all that apply.)



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(b) $\overline{JL} \cong \overline{MK}$

(c) $\angle JLK \cong \angle JKL$

(d) $\overline{KJ} \cong \overline{KL}$

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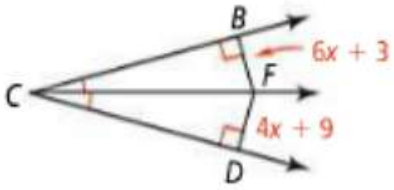
10. Find the value of x and the length of $\overline{BF}$ if $\overline{CB} \cong \overline{CD}$.



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11. You own the kite shown below. You want to put decorative fabric along the perimeter of the kite before you fly it in the Arizona Kite Flying Championship next weekend.

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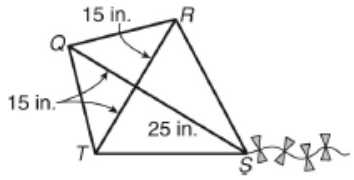


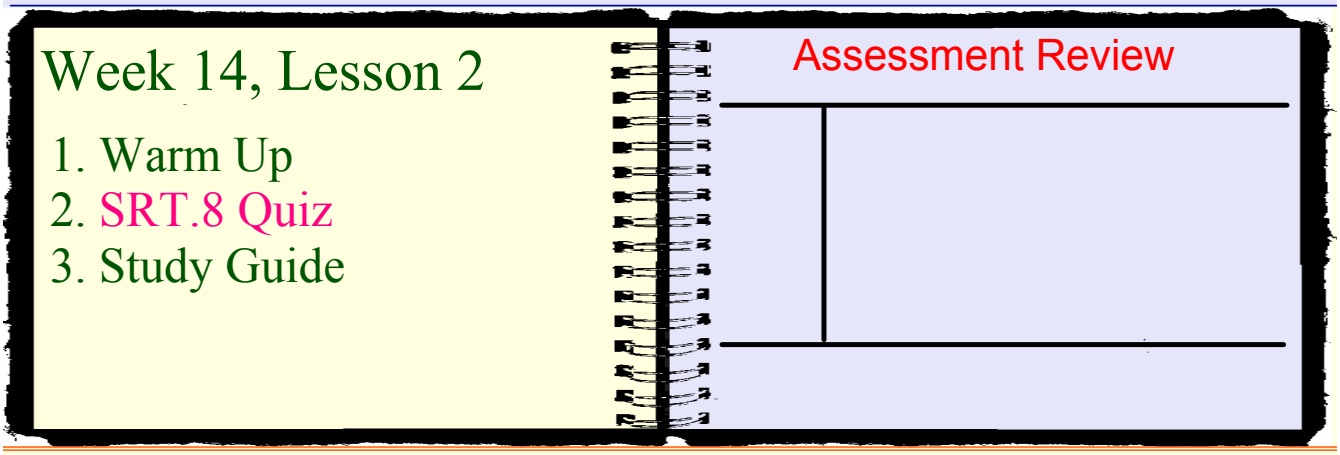
E.Q. What do I need to do to prepare for the Unit 3 Assessment?

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

Week 14, Lesson 2

1. Warm Up
2. SRT.8 Quiz
3. Study Guide

Assessment Review



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:

You are designing a ramp to your house, as shown in the picture at the right.

(a) What will the length of the ramp be?

(b) How much <u>less</u> longer is the ramp than 23 feet?

(c) If each foot of wood plank costs $1.50, how much money would you save by building the ramp rather than planking the 23 feet of ground?

SRT.8 Quiz!

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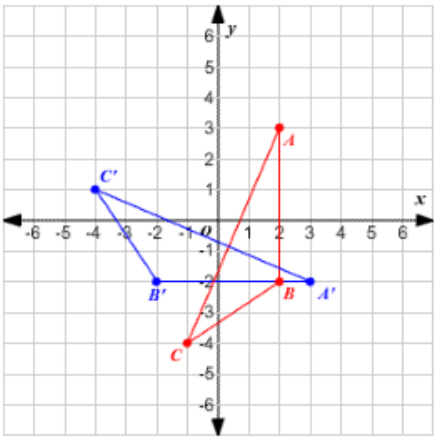

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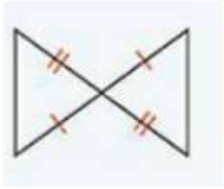

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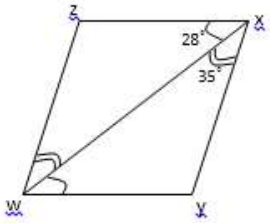

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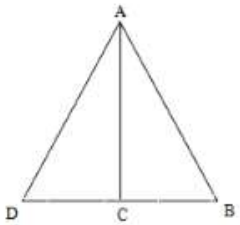

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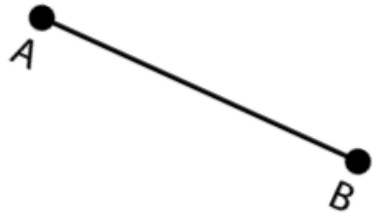

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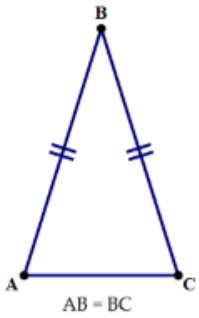

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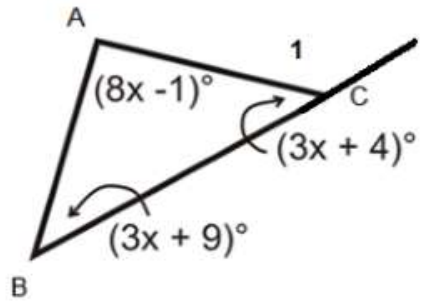

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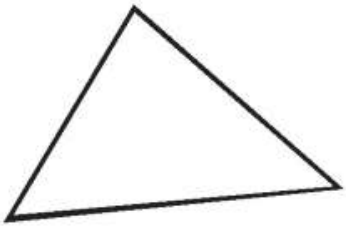

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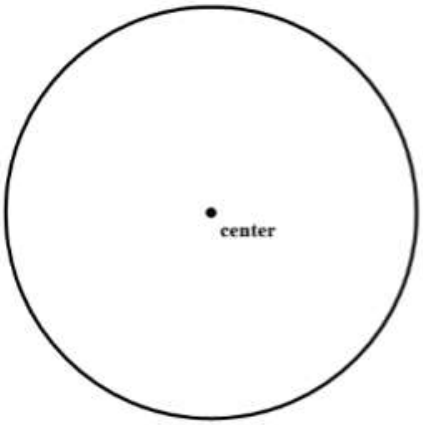

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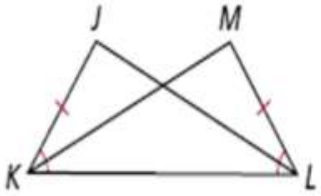

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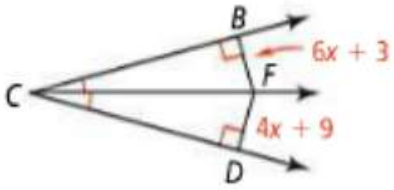

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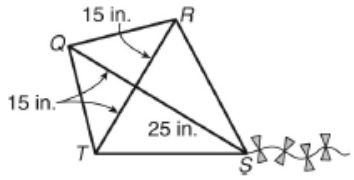

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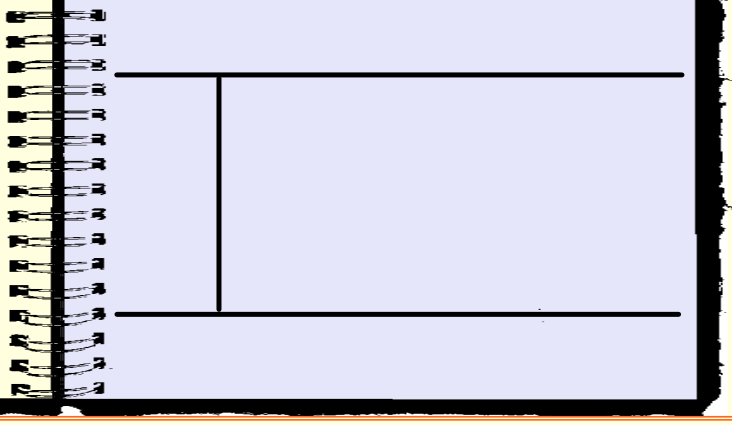
Week 14, Lesson 3

1. Assessment



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Warm Up:

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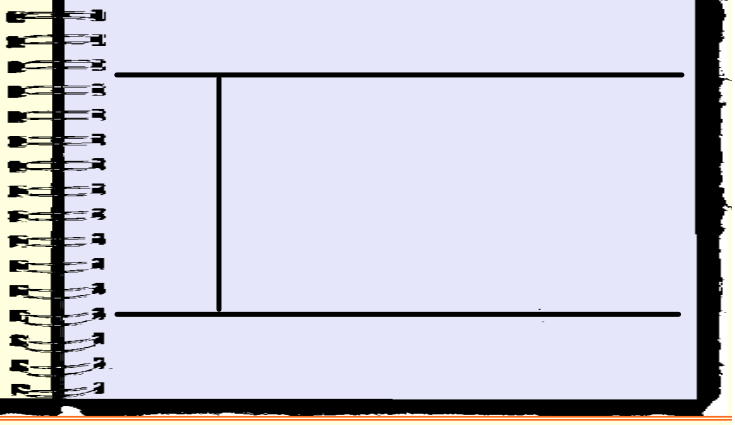
Week 14 - 4th, 6th, 7th periods

1. Warm Up
2. Study Guide



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