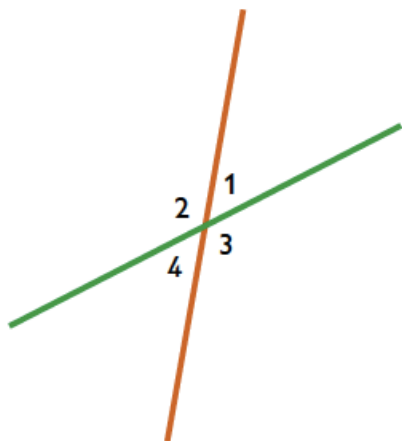Name:
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UNIT 3 SUMMARY AND REVIEW
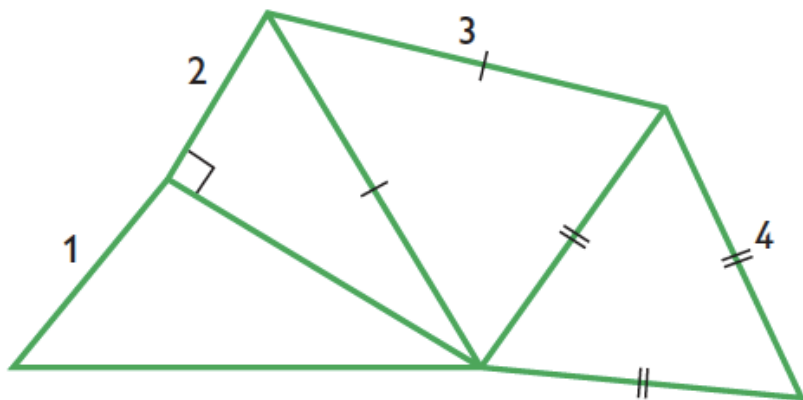
If the measure of ∠1 is 53°, what is the measure of ∠3?

Two angles are adjacent, and the noncommon sides lie on the same line. If one angle measures 35°, what is the measure of the other angle?

A 35°   **B** 55°   **C** 145°   **D** Cannot be determined

In this diagram, there are four triangles.

Match each triangle type to the corresponding triangle on the figure.

| Isosceles triangle | Right triangle | Equilateral triangle | Obtuse triangle |

One of the angle measures in a certain isosceles triangle is 40°. Which of these pairs of angle measures could be the other two angle measures? There may be more than one correct pair of angle measures.

Ⓐ 60° and 60°

Ⓑ 30° and 110°

Ⓒ 40° and 100°

Ⓓ 75° and 75°

Ⓔ 40° and 40°

Ⓕ 70° and 70°

A certain triangle has only two congruent angles. Which statement must be true about the sides of the triangle?

Ⓐ All three sides must be the same length.

Ⓑ All three sides must be different lengths.

Ⓒ Two of the sides must be the same length.

Ⓓ Two of the sides must be shorter than the third side.

A certain triangle has three congruent sides. Which statement must be true about the angles of the triangle?

Ⓐ All three angles are different measures.

Ⓑ All three angles are the same measure.

Ⓒ Two angles are the same measure, and the third angle is larger.

Ⓓ Two angles are the same measure, and the third angle is smaller.

Which statement must be true of three side lengths in order for them to make a triangle?

Ⓐ All three side lengths must be different lengths.

Ⓑ All three side lengths must add up to 180.

Ⓒ The sum of the lengths of the two shorter sides must be less than the length of the third side.

Ⓓ The sum of the lengths of the two shorter sides must be greater than the length of the third side.

The side lengths of a certain triangle are 13 cm and 15 cm. Which of these side lengths could be used for the third side? There may be more than one correct side length.

Ⓐ 5 cm   Ⓑ 13 cm   Ⓒ 27 cm   Ⓓ 30 cm   Ⓔ 38 cm

Here is a picture of a single-leaf bascule bridge—a type of drawbridge—in open position.

When the leaf of the drawbridge opens, the open end of the bridges makes *EDF* measuring 90° (see figure). What is the measure of *DEF*, which is the angle the leaf of the bridge makes with the horizontal plane? Explain your reasoning.
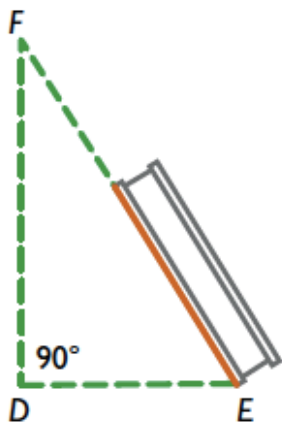
Maya wants to construct this triangle.
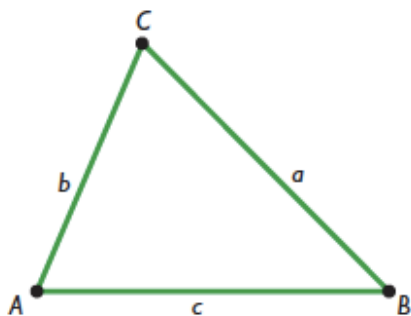
She starts by using a ruler to measure the lengths of $\overline{BC}$, $\overline{AC}$, and $\overline{AB}$.

Maya says, "I just need to draw lines the same length as the three I just measured, and I'm done."

Explain why she may be wrong.

What is the sum of the angle measures of a regular heptagon (7-sided polygon)?

A 128.6°   B 900°   C 1,080°   D 1,260°

A certain regular polygon has angle measures of 135°. What type of polygon is it?

A Pentagon   B Hexagon   C Octagon   D Decagon

Explain why the sum of the interior angles of a hexagon is 720°.
Show your work and explain your reasoning.
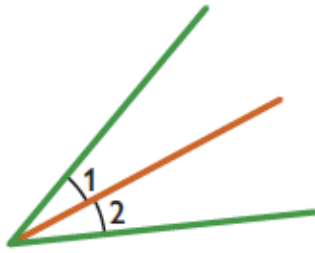
This is a regular tetradecagon (14-sided polygon).
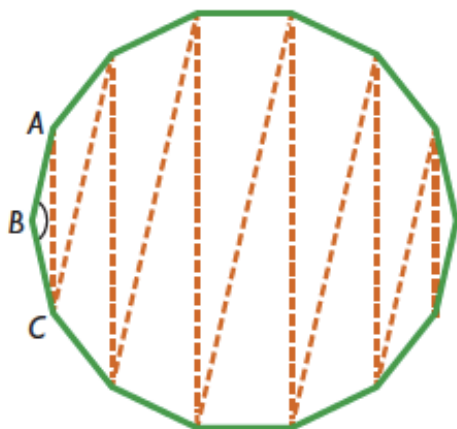
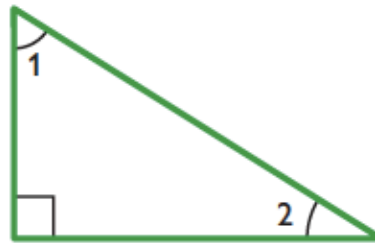What is the measure of ∠ABC? Round your answer to the nearest hundredth.

∠ABC = _____°

In which figure are ∠1 and ∠2 complementary?

A

B

C

D

Solve for x.

3x / 60°   x

x = _____ °
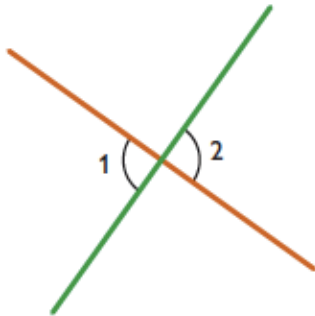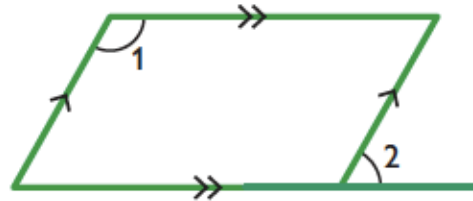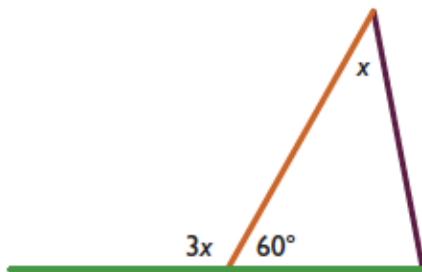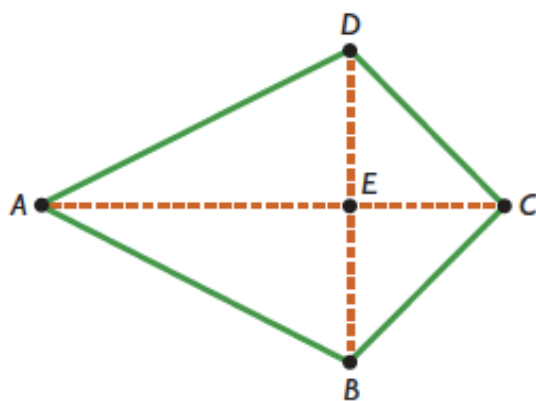
In this figure, line *m* is parallel to $\overline{AC}$, $\angle 1 = \angle 3$, and $\angle 2 = 64°$.
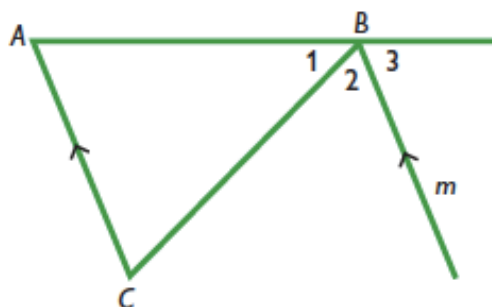
Calculate the measure of $\angle ACB$.

$\angle ACB$ = _____ °

This quadrilateral is a kite, meaning $\overline{AD} \cong \overline{AB}$ and $\overline{BC} \cong \overline{DC}$

$\angle BAE = 28°$ and $\angle EDC = 44°$.
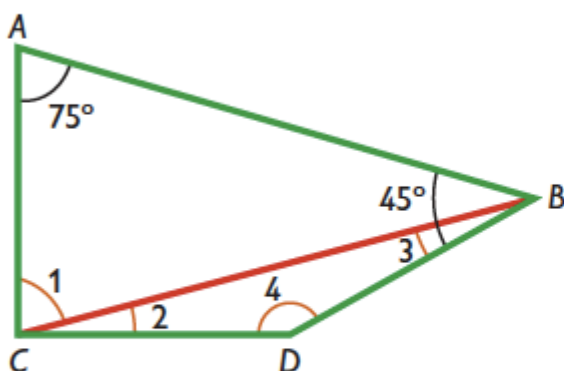
What is the measure of $\angle ABC$?
$\angle ABC$ = _____ °

Figure ABCD ais an irregular quadrilateral and ΔABC and ΔBCD are isosceles triangles. ∠CAB measures 75° and ∠ABD measures 45°.

What are the measures of ∠1, ∠2, ∠3, and ∠4?

Explain how you determined each angle measure.

Consider your work in this unit involving the angle measures and angle sums of triangles, quadrilaterals, and regular polygons.

In your Notebook, create a graphic organizer to show facts about polygons and angles. Organize your visual graphic organizer in a way that will allow you to use it as a reference throughout the rest of the school year.

Use a chart similar to the one shown, or create your own.

Shape	Number of Sides	Number of Triangles	Angle Sum— Interior Angles	Each Interior Angle Measure (if regular polygon)	Angle Sum— Exterior Angles	Each Exterior Angle Measure (if regular polygon)
Triangle						
Quadrilateral						
Pentagon						
Hexagon						
Octagon						
Any Polygon						

Read your work on the Self Check task. What would you do differently if you were starting the Self Check task now?

Review the notes you took during the lessons about diagonals in parallelograms, rhombuses, and rectangles. Add any additional ideas you have about the topic to your notes.

Read your notes and think about your work in this unit involving angles (for example, acute angles) and angle pairs (for example, complementary angles).

In your Notebook, create a graphic organizer to show facts about angles and angle pairs. Organize your graphic organizer in a way that will allow you to use it as a reference throughout the rest of the school year.

Use a chart similar to the one shown, or create your own. Make sure to include diagrams and formulas. (If you prefer, add the types of angles and angle pairs to your math vocabulary list.)