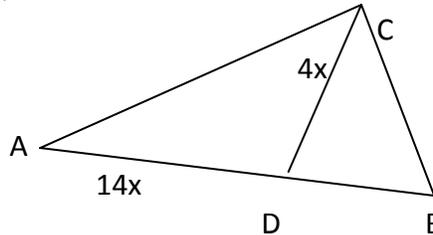# Geometry Honors
CEOCE Study Guide

B141   Finds Area of Plane Figure (MC, GR,ER)
        Finds Volume, Lateral Area, Total Area of Space Figures
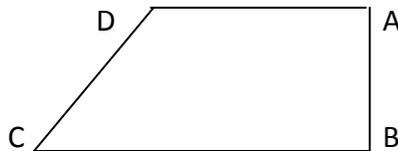

In the accompanying diagram of $\triangle ABC, \overline{CD} \perp \overline{AB}$, AB = 14x and CD = 4x. Find the area.

A

14x

4x

C

D   B

In the accompanying diagram, rectangle MATH has a length of 16 and a width of 14. The midpoints of sides $\overline{MA}$, $\overline{AT}$, $\overline{TH}$ and $\overline{HM}$ are connected to form quadrilateral BLUR.   What is the area of quadrilateral BLUR?

M   A

H   T

In the accompanying diagram of trapezoid ABCD, AB = 10, BC = 28, CD = 22, $\overline{CB} \perp \overline{AB}$, and altitude $\overline{DE}$ is drawn. What is the area of the trapezoid?

D   A

C   B

In the accompanying diagram of trapezoid ABCD, AB = 6, CD = 25, and altitude $\overline{AE}$ = 7. What is the area of the trapezoid?

A   B

D   C

E
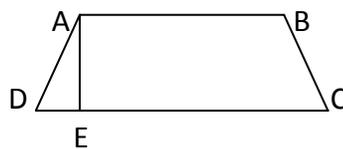
The length of a diagonal of a square is 14 . What is the area of the square?

A rectangular prism is in the shape of a cube and as a volume of 343 in^3, what is the length of the side of the prism?

What is the volume of a right circular cylinder whose diameter is 12 in and height is 5 in? Use 3.14 for pi.

A circle of radius 10cm in inscribed in a square. What is the area of the square, not covered by the circle?

A circle has a diameter of 4m. What is the area and circumference of the circle?

What is the volume of a sphere with radius 22cm? What would the surface area of the same sphere be?

B241   Uses Pythagorean Theorem (MC)

If the length of one of the legs of a right triangle is 9 and the length of the other leg is 12, what is the length of the hypotenuse?

What is the length of the hypotenuse of a right triangle with legs of lengths of 11 and 12?

The length of the hypotenuse of a right triangle is 13 and the length of one leg is 7. What is the length of the other leg?

The hypotenuse of a right triangle has a length of 26. If one length has a length of 10, what is the length of the other leg?

What is the length of the diagonal of a rectangle whose dimensions are 8 by 11?

C141   Represents Problems with Triangles / Applies Properties (MC, SR)
         Models Quadrilaterals/Applies Properties
         Describes/applies congruence relationships
         Finds complement/supplement
         Finds Angles/sides of quadrilaterals

If the measures of three angles of a triangle are represented by x, x-5, and 3x-15, what type of triangle is being represented?

Given an isosceles triangle with its vertex angle equal to twice its base angle, will the triangle be right, acute, obtuse or equilateral?

In ΔCAT, m∠T =75 and TA > TC. Name the smallest angle of the triangle.

In ΔDOG, if the exterior of angle D is an acute angle, then what type of an angle is angle G?

In ΔHOG, m∠H = 6x, m∠O= 5x+3 and m∠G = 4x + 17. Name the side that is the longest.

Which quadrilaterals have congruent diagonals?

Are all rectangles squares? Are all squares rectangles?

Which quadrilaterals can be classified as parallelograms?

State the properties of the diagonals of a rhombus.

Name the 5 properties of a parallelogram?

Classify a square in as many ways as possible.

In parallelogram MATH, m∠M = 3x + 15 and m∠T = 5x -11. What is the measure of angle A?

Given rhombus GOLD, GO = x + 6, OL= 3x – 14, find the value of x.

What is the length of the side of a rhombus whose diagonals are 10 and 24?

Two consecutive angles of a parallelogram measure 2x – 5 and 3x - 15 . What is the value of x?

What is the complement of an angle whose measure is 3y.

Two complementary angles are in the ratio 2:3 . What is the measure in degrees of the largest angle.

Draw a diagram that represent $\overline{AB} \perp \overline{CD}$ at point E where ∠AEF and ∠FEC are complementary angles.

In the figure at right, $\overline{BD} \perp \overline{CD}$ and $\overline{AC} \perp \overline{CD}$.
If $\overline{CB} \cong \overline{AD}$, Which theorem can be used to prove that
$\triangle ACD \cong \triangle BDC$?
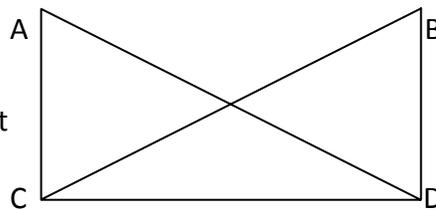
Draw a diagram and label the congruent angles and/or sides for each: SAS, HL, SSS, ASA, AAS, AAA, CPCTC

For the following regular polyhedra, what would be the measure of an interior angle? An exterior angle?   Square, pentagon, octagon, decagon

C241   Relates Congruency / Similarity / Equivalence (MC)

How many congruent triangles are formed by connecting the midpoints of the three sides of an isosceles triangle?

If two triangles are congruent by SSS, what conditions must be true?

If two triangles are congruent by SAS, what conditions must be true?

If two triangles are congruent by ASA, what conditions must be true?

If two triangles are congruent by AAS, what conditions must be true?

If two triangles are congruent by HL, what conditions must be true?

Draw a diagram and label the congruent angles and/or sides for each: SAS, HL, SSS, ASA, AAS, AAA, CPCTC

C342   Finds Unknown with Coordinate Plane (MC)

What is the length of a segment whose endpoints are (5, -3) and (6, -8)?

A circle whose center is (2, 3) and passes thought the point (6, -1). What is the length of the radius of the circle?

Find the midpoint of a segment whose endpoints are (4, -7) and (10, 5).

Key Vocabulary		

Diameter	radius	complementary
Supplementary	congruent	similar
Midpoint	parallelogram	regular polygon
Rhombus	square	rectangle
Triangle	isosceles	scalene
Equilateral	diagonal	prism
Sphere	cone	midsegment
Parallel	corresponding angles	hypotenuse
Altitude	decagon	hexagon

Web Resources

http://math.rice.edu/~lanius/Geom/

http://www.ies.co.jp/math/java/geo/congruent.html

http://www.math.com/homeworkhelp/Geometry.html

http://money.howstuffworks.com/personal-finance/math-tutoring/geometry/complementary-supplementary-angle.htm