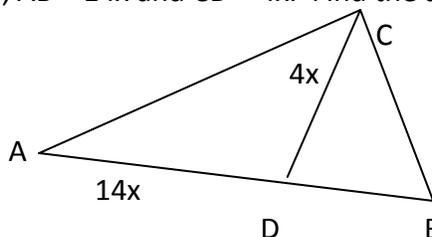


Geometry  
CEOCE Study Guide

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

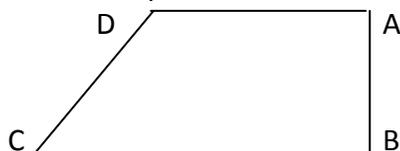
In the accompanying diagram of  $\triangle ABC$ ,  $\overline{CD} \perp \overline{AB}$ ,  $AB = 14x$  and  $CD = 4x$ . Find the area. (not to scale)



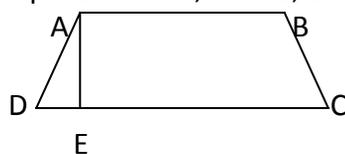
In the accompanying diagram, rectangle MATH has a length of 16 and a width of 14. The midpoints of sides  $\overline{MA}$ ,  $\overline{AT}$ ,  $\overline{TH}$  and  $\overline{HM}$  are connected to form quadrilateral BLUR. What is the area of quadrilateral BLUR?



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?



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



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

The length of a diagonal of a square is 13. What is the area of the square?

A circle of radius 10cm is 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?

B143 Solves Ratios of Similar Figures(MC)

Miguel is in his front yard and a tree in his yard cast a shadow of 20 feet. Miguel is 6 feet tall and his shadow is 4 feet. How tall is the tree?

## Geometry CEOCE Study Guide

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A water tower is 25 feet high and cast a shadow of 15 feet. At the same time, Andrea's shadow is 3 feet. How tall is Andrea?

A triangle as a base of 20 in. and a height of 8 in and is similar to a second triangle with a height of 12in. How long is the base of the second triangle?

If the radius of a right cylinder is doubled, and the height is doubled, how many times greater will the volume of the new cylinder be?

How would tripling the radius of a sphere affect its volume?

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| B241 Uses Pythagorean Theorem (MC, SR) |
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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)<br>Models Quadrilaterals/Applies Properties<br>Describes/Applies Congruence Relationships<br>Proves Geometric Figures/Solids Properties |
|---|

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  $\triangle CAT$ ,  $m\angle T = 75$  and  $TA > TC$ . Name the smallest angle of the triangle.

In  $\triangle DOG$ , if the exterior of angle D is an acute angle, then what type of an angle is angle G?

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Geometry  
CEOCE Study Guide

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In  $\triangle HOG$ ,  $m\angle H = 6x$ ,  $m\angle O = 5x+3$  and  $m\angle G = 4x + 17$ . Name the side that is the longest.

Which quadrilaterals have congruent diagonals?  
Are all rectangles squares?

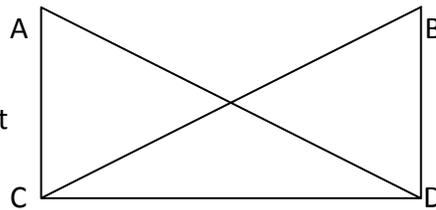
Which quadrilaterals can be classified as parallelograms?

State the properties of the diagonals of a rhombus.

Name the 5 properties of a parallelogram.

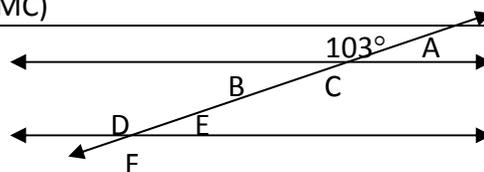
Classify a square in as many ways as possible.

In 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  $\triangle ACD \cong \triangle BDC$  ?



C241 Solves Missing Angle / Parallel Lines(MC)

Given that Angle A is congruent to Angle E  
find the measure of the missing angles.



C342 Identifies Parallel / Perpendicular Lines(MC)

Are the following pairs of lines parallel, perpendicular or neither?

$2x + 3y = 1$  and  $y = -2/3 x - 7$

$y = -x + 4$  and  $x - y = 10$

$3x - 7y = 15$  and  $7x - 3y = 8$ .

Given the following points, would the two lines containing them be parallel, perpendicular or neither?

A line containing points (0, 7) & (2, 1) and the other line though points (3, 5) & (2, 8).

A line containing points (3, 4) & (3, -1) and the other line though points (7, -1) & (5, -1).

A line containing points (-3, -2) & (4, 1) and the other line though points (-5, 1) & (-2, -6).

Given points A(7, 2) and B(5, 6), what is the slope of a line perpendicular to line AB?

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### 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>