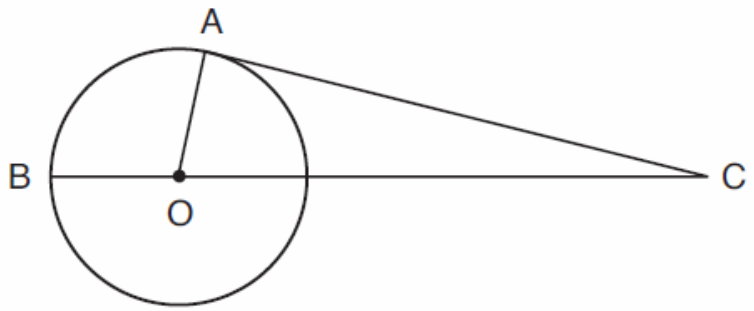
Geometry
Daily Quiz 11062019

Question 1.

In the diagram below of circle O with radius $\overline{OA}$, tangent $\overline{CA}$ and secant $\overline{COB}$ are drawn.



(Not drawn to scale)

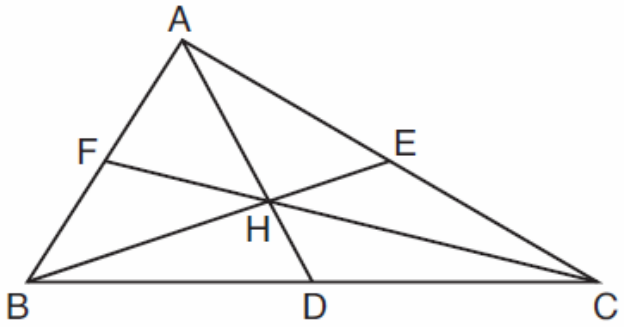
If $AC = 20$ cm and $OA = 7$ cm, what is the length of $\overline{OC}$, to the *nearest centimeter*?

(1) 19
(2) 20
(3) 21
(4) 27

Question 2.

Do you remember this Fun Fact? The Centroid of a Triangle is the centre of the triangle that can be calculated as the point of intersection of all the three medians of a triangle. The median is a line drawn from the midpoint of a side to the opposite vertex. The centroid separates all the medians of the triangle in the ratio 2:1.

In the diagram below of $\triangle ABC$, point H is the intersection of the three medians.



If $\overline{DH}$ measures 2.4 centimeters, what is the length, in centimeters, of $\overline{AD}$?

(1) 3.6
(2) 4.8
(3) 7.2
(4) 9.6

Question 3.

Which set of numbers could be the lengths of the sides of an isosceles triangle?

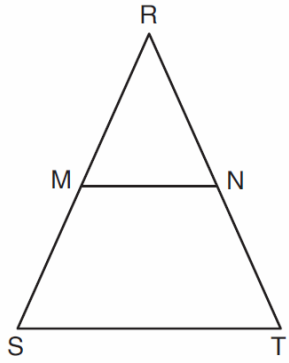
(1) {1, 1, 2}
(2) {3, 3, 5}
(3) {3, 4, 5}
(4) {4, 4, 9}

Question 4.

A paper container in the shape of a right circular cone has a radius of 3 inches and a height of 8 inches. Determine and state the number of cubic inches in the volume of the cone, in terms of π.

Question 5.

In isosceles triangle RST shown below, $\overline{RS} \cong \overline{RT}$, M and N are midpoints of $\overline{RS}$ and $\overline{RT}$, respectively, and $\overline{MN}$ is drawn. If $MN = 3.5$ and the perimeter of $\triangle RST$ is 25, determine and state the length of $\overline{NT}$.



Question 6.

Write an equation of the line that is perpendicular to the line whose equation is $2y = 3x + 12$ and that passes through the origin.

Question 7.

Rectangle $KLMN$ has vertices $K(0,4)$, $L(4,2)$, $M(1,-4)$, and $N(-3,-2)$. Determine and state the coordinates of the point of intersection of the diagonals.

Question 8.

If $\overline{AB}$ is defined by the endpoints $A(4,2)$ and $B(8,6)$, write an equation of the line that is the perpendicular bisector of $\overline{AB}$.

Question 9.

Theorem: A triangle has at most one obtuse angle.

Eduardo is proving the theorem above by contradiction. He began by assuming that in $\triangle ABC$, $\angle A$ and $\angle B$ are both obtuse. Which theorem will Eduardo use to reach a contradiction?

A If two angles of a triangle are equal, the sides opposite the angles are equal.

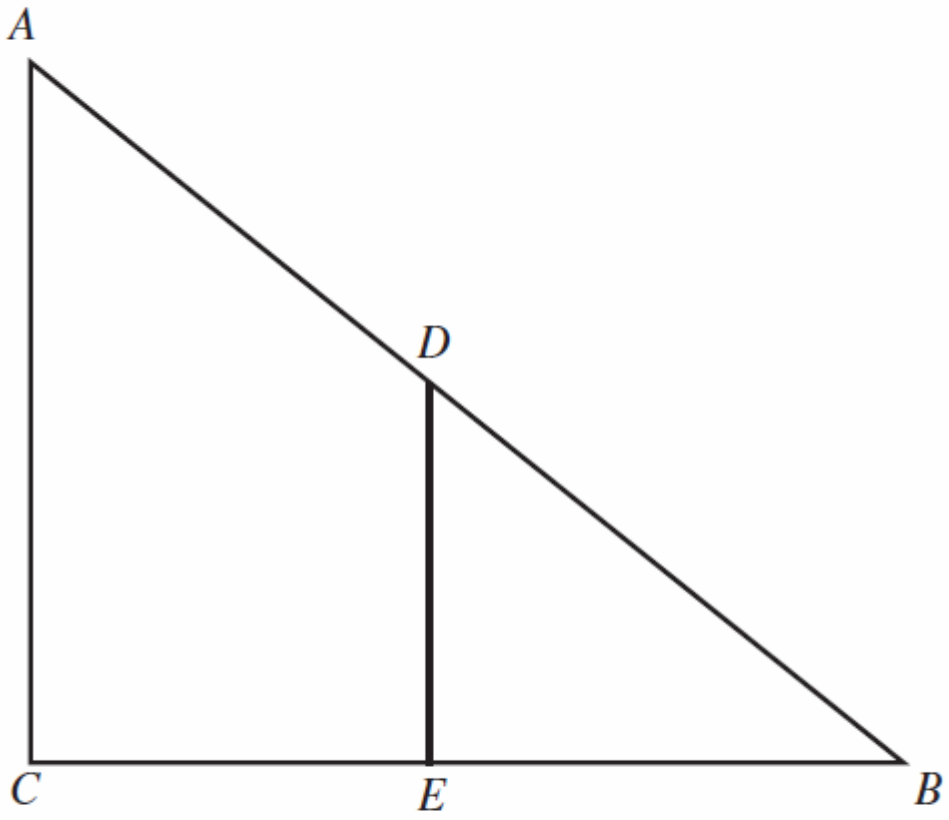
B If two supplementary angles are equal, the angles each measure 90°.

C The largest angle in a triangle is opposite the longest side.

D The sum of the measures of the angles of a triangle is 180°.

Question 10.

Which of the following facts would be sufficient to prove that triangles *ABC* and *DBE* are similar?



A $\overline{CE}$ and $\overline{BE}$ are congruent.

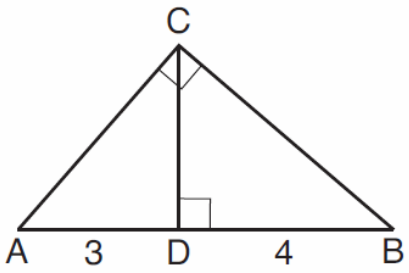
B $\angle ACE$ is a right angle.

C $\overline{AC}$ and $\overline{DE}$ are parallel.

D $\angle A$ and $\angle B$ are congruent.

Bonus Question.
Show how you got your answer.

In the diagram below of right triangle ABC, $\overline{CD}$ is the altitude to hypotenuse $\overline{AB}$, $AD = 3$, and $DB = 4$.



What is the length of $\overline{CB}$?

(1) $2\sqrt{3}$

(2) $\sqrt{21}$

(3) $2\sqrt{7}$

(4) $4\sqrt{3}$

PARCC
Partnership for Assessment of Readiness for College and Careers

High School Mathematics Assessment Reference Sheet

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilograms
1 kilogram = 2.2 pounds
1 ton = 2000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallons
1 liter = 1000 cubic centimeters

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d \ \ or \ \ C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Arithmetic Sequence	$a_n = a_1 + (n-1)d$
Geometric Sequence	$a_n = a_1 r^{n-1}$
Geometric Series	$S_n = \frac{a_1 - a_1 r^n}{1-r}$ where $r \neq 1$
Radians	1 radian $= \frac{180}{\pi}$ degrees
Degrees	1 degree $= \frac{\pi}{180}$ radians

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