Geometry
Daily Quiz 11052019

Question 1.

Given: "If a polygon is a triangle, then the sum of its interior angles is 180°."

What is the contrapositive of this statement?

(1) "If the sum of the interior angles of a polygon is not 180°, then it is not a triangle."

(2) "A polygon is a triangle if and only if the sum of its interior angles is 180°."

(3) "If a polygon is not a triangle, then the sum of the interior angles is not 180°."

(4) "If the sum of the interior angles of a polygon is 180°, then it is a triangle."

Question 2.

The image of $\triangle ABC$ after the transformation $r_{y\text{-axis}}$ is $\triangle A'B'C'$. Which property is *not* preserved?

(1) distance

(2) orientation

(3) collinearity

(4) angle measure

Question 3.

The equations $y = 2x + 3$ and $y = -x^2 - x + 1$ are graphed on the same set of axes. The coordinates of a point in the solution of this system of equations are

(1) $(0,1)$
(2) $(1,5)$
(3) $(-1,-2)$
(4) $(-2,-1)$

Question 4.

Which quadrilateral has diagonals that are always perpendicular bisectors of each other?

(1) square
(2) rectangle
(3) trapezoid
(4) parallelogram

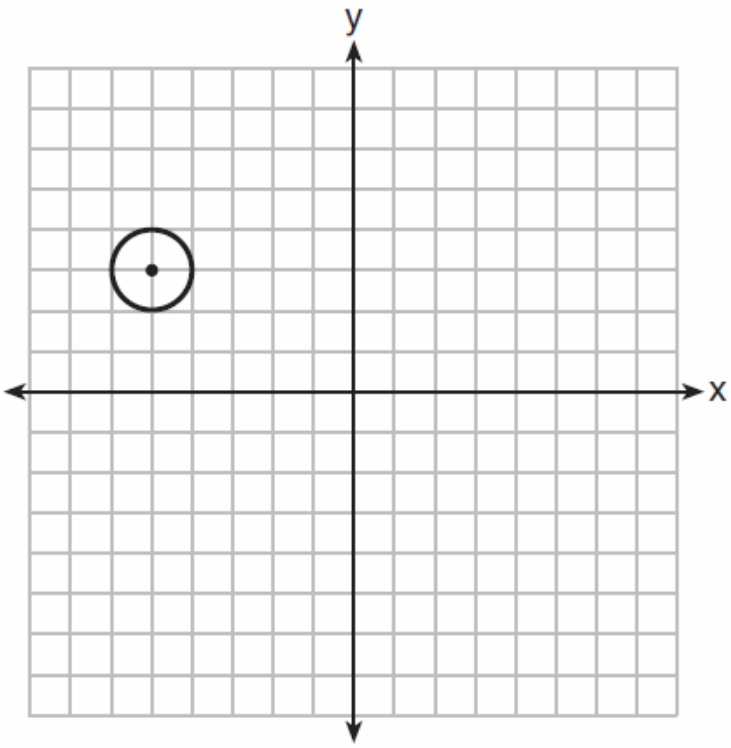
Question 5.

In parallelogram $JKLM$, $m\angle L$ exceeds $m\angle M$ by 30 degrees. What is the measure of $\angle J$?

(1) 75°
(2) 105°
(3) 165°
(4) 195°

Question 6.

Which equation represents the circle shown in the graph below?



(1) $(x - 5)^2 + (y + 3)^2 = 1$

(2) $(x + 5)^2 + (y - 3)^2 = 1$

(3) $(x - 5)^2 + (y + 3)^2 = 2$

(4) $(x + 5)^2 + (y - 3)^2 = 2$

Question 7.

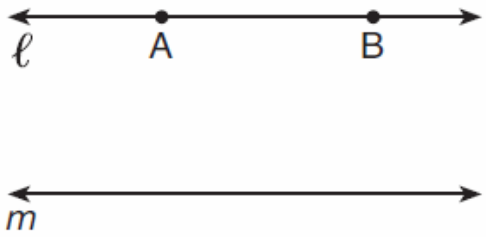
To find the sum of the interior angles of a polygon with n sides you can use:(n-2)180 degrees. (Learn this formula.)

What is the measure of each interior angle in a regular octagon?

(1) 108°
(2) 135°
(3) 144°
(4) 1080°

Question 8.

Points A and B are on line ℓ, and line ℓ is parallel to line m, as shown in the diagram below.



How many points are in the same plane as ℓ and m and equidistant from ℓ and m, and also equidistant from A and B?

(1) 1
(2) 2
(3) 3
(4) 0

Question 9.

A carpenter made a storage container in the shape of a rectangular prism. It is 5 feet high and has a volume of 720 cubic feet. He wants to make a second container with the same height and volume as the first one, but in the shape of a triangular prism. What will be the number of square feet in the area of the base of the new container?

(1) 36
(2) 72
(3) 144
(4) 288

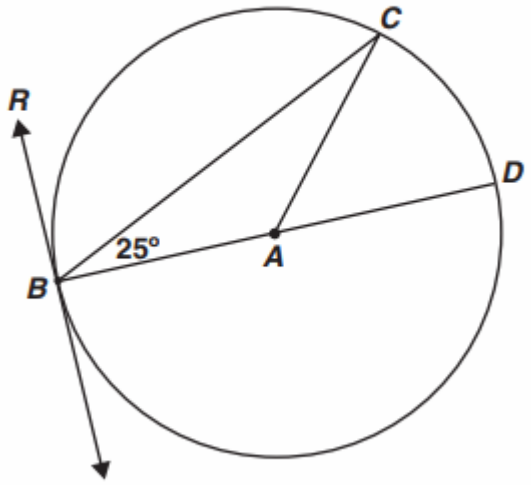
Question 10.

In $\triangle ABC$, $m\angle B < m\angle A < m\angle C$. Which statement is *false*?

(1) $AC > BC$
(2) $BC > AC$
(3) $AC < AB$
(4) $BC < AB$

Bonus Question.

$\overline{RB}$ **is tangent to a circle, whose center is** A**, at point** B**.** $\overline{BD}$ **is a diameter.**



What is $m\angle CBR$**?**

What is the measure of angle CAB?

Explain how you arrived at both answers or show your working.

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.

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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