Geometry
Daily Quiz 12172019

Question 1.

The lengths of two sides of a triangle are 7 and 11. Which inequality represents all possible values for x, the length of the third side of the triangle?

(1) $4 \leq x \leq 18$
(2) $4 < x \leq 18$
(3) $4 \leq x < 18$
(4) $4 < x < 18$

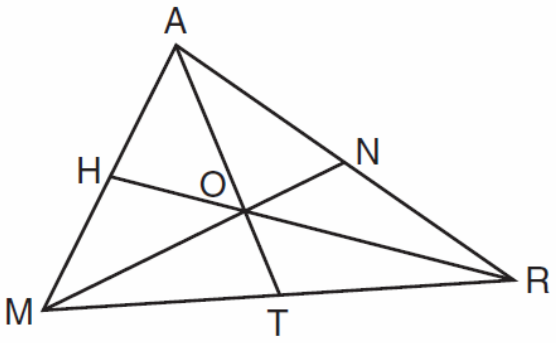
Question 2.

Which statement is the inverse of "If $x + 3 = 7$, then $x = 4$"?

(1) If $x = 4$, then $x + 3 = 7$.
(2) If $x \neq 4$, then $x + 3 \neq 7$.
(3) If $x + 3 \neq 7$, then $x \neq 4$.
(4) If $x + 3 = 7$, then $x \neq 4$.

Question 3.

In the diagram below of $\triangle MAR$, medians $\overline{MN}$, $\overline{AT}$, and $\overline{RH}$ intersect at O.



If $TO = 10$, what is the length of $\overline{TA}$?

(1) 30

(2) 25

(3) 20

(4) 15

Question 4.

What is an equation of the line that passes through the point (4,5) and is parallel to the line whose equation is $y = \frac{2}{3}x - 4$?

(1) $2y + 3x = 11$

(2) $2y + 3x = 22$

(3) $3y - 2x = 2$

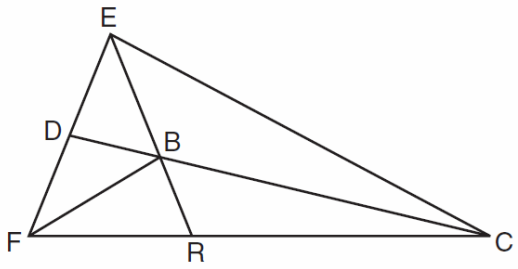
(4) $3y - 2x = 7$

Question 5.

The measures of the angles of a triangle are in the ratio 5:6:7. Determine the measure, in degrees, of the *smallest* angle of the triangle.

Question 6.

In the diagram below, point B is the incenter of $\triangle FEC$, and $\overline{EBR}$, $\overline{CBD}$, and $\overline{FB}$ are drawn.

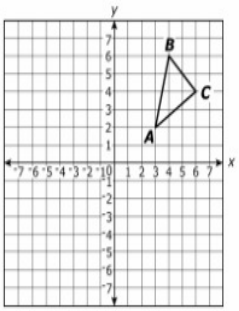


If $m\angle FEC = 84$ and $m\angle ECF = 28$, determine and state $m\angle BRC$.

The incenter of a triangle is the point where the three angle bisectors meet.

Question 7.

Triangle *ABC* is graphed in the *xy*-coordinate plane, as shown.



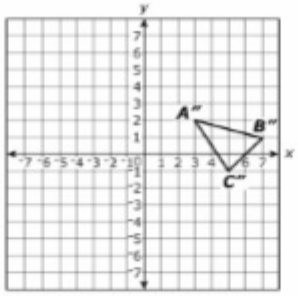
Triangle *ABC* is reflected across the *x*-axis to form triangle $A'B'C'$. What are the coordinates of C' after the reflection?

- A. $(-6, 4)$
- B. $(3, -2)$
- C. $(4, -6)$
- D. $(6, -4)$

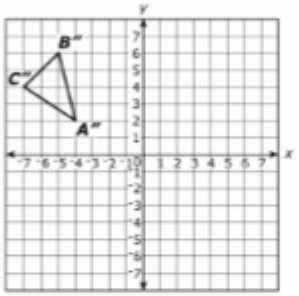
Question 8.
The triangle ABC referred to below is the triangle ABC in Question 7

Triangle *ABC* in the *xy*-coordinate plane will be rotated 90° counterclockwise about point *A* to form triangle $A''B''C''$. Which graph represents $A''B''C''$?

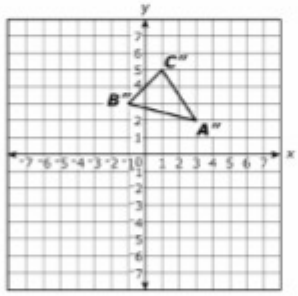
A.



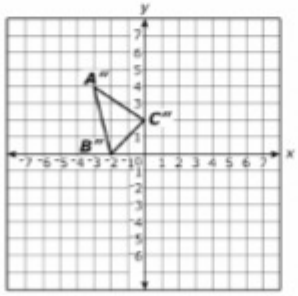
B.



C.

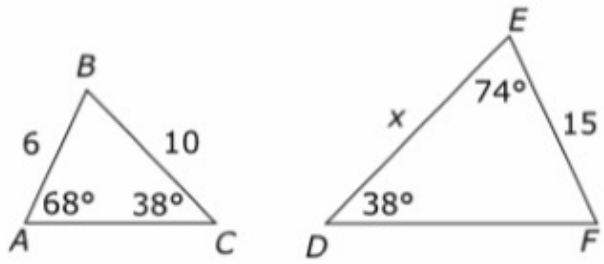


D.



Question 9.

Given the two triangles shown, find the value of x.



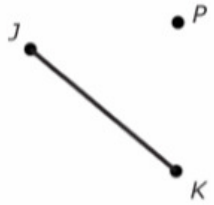
Select from the drop-down menu to correctly complete the sentence.

The value of x is Choose...

- 4
- 11
- 12
- 19
- 20
- 25

Question 10.

The figure shows line segment JK and a point P that is not collinear with points J and K.



Suppose that line segment $J'K'$ is the image of line segment JK after a dilation with scale factor 0.5 that is centered at point P. Which statement **best** describes the position of line segment $J'K'$?

A. Line segment $J'K'$ is parallel to line segment JK.

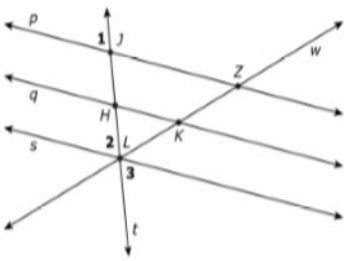
B. Line segment $J'K'$ is perpendicular to line segment JK.

C. Line segment $J'K'$ intersects line segment JK at one point, but it is not perpendicular to line segment JK.

D. Line segment $J'K'$ lies on the same line as line segment JK.

Bonus.

. In the figure, $p \parallel s$. Transversals t and w intersect at point L.



Part A

Statement	Reason
1) $p \parallel s$	Given
2) $\angle 1 \cong \angle 2$	Corresponding angles along parallel lines are congruent.
3) $\angle 2 \cong \angle 3$	?
4) $\angle 1 \cong \angle 3$	Congruence of angles is transitive.

What is the missing reason in step 3?

- A. Alternate interior angles along parallel lines are congruent.
- B. Alternate exterior angles along parallel lines are congruent.
- C. Corresponding angles along parallel lines are congruent.
- D. Vertical angles are congruent.

Part B

Consider the proof of $p \parallel q$ given that $\triangle LHK \sim \triangle LJZ$.

If $\triangle LHK \sim \triangle LJZ$, then $\angle LHK \cong \angle LJZ$ because corresponding angles in similar triangles are congruent.

Which statement concludes the proof?

- A. If $\angle LHK \cong \angle LJZ$, then $p \parallel q$ because when base angles are congruent, the lines are parallel.
- B. If $\angle LHK \cong \angle LJZ$, then $p \parallel q$ because when corresponding angles are congruent, the lines are parallel.
- C. If $\angle LHK \cong \angle LKH$, then $p \parallel q$ because when alternate exterior angles are congruent, the lines are parallel.
- D. If $\angle JLZ \cong \angle HLK$, then $p \parallel q$ because when corresponding angles are congruent, the lines are parallel.

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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