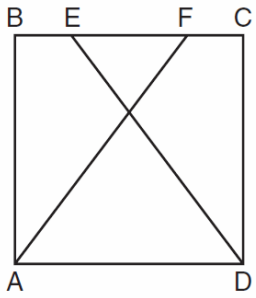
**Name.....Period.....**
**Geometry**
**Weekly Homework 01102020**

**Question 1.**

The diagram below shows square $ABCD$ where $E$ and $F$ are points on $\overline{BC}$ such that $\overline{BE} \cong \overline{FC}$, and segments $AF$ and $DE$ are drawn.

Prove that $\overline{AF} \cong \overline{DE}$.



**Question 2.**

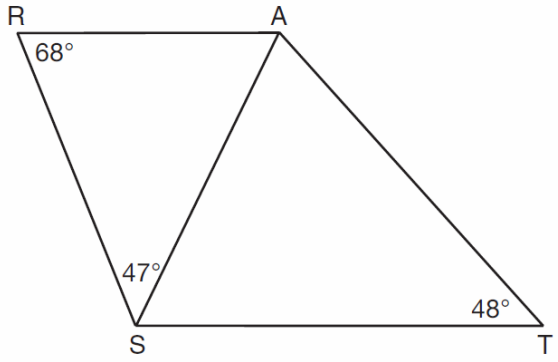
In parallelogram $ABCD$, with diagonal $\overline{AC}$ drawn, $m\angle BCA = 4x + 2$, $m\angle DAC = 6x - 6$, $m\angle BAC = 5y - 1$, and $m\angle DCA = 7y - 15$. Determine $m\angle B$.

Question 3.

The coordinates of the endpoints of $\overline{BC}$ are $B(5,1)$ and $C(-3,-2)$. Under the transformation $R_{90}$, the image of $\overline{BC}$ is $\overline{B'C'}$. State the coordinates of points $B'$ and $C'$.

Question 4.

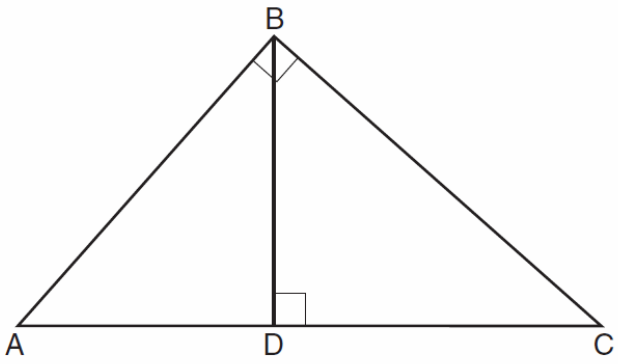
As shown in the diagram below, $\overline{AS}$ is a diagonal of trapezoid $STAR$, $\overline{RA} \parallel \overline{ST}$, $m\angle ATS = 48$, $m\angle RSA = 47$, and $m\angle ARS = 68$.




Determine and state the longest side of $\triangle SAT$.

Question 5.

In right triangle $ABC$ shown below, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$.



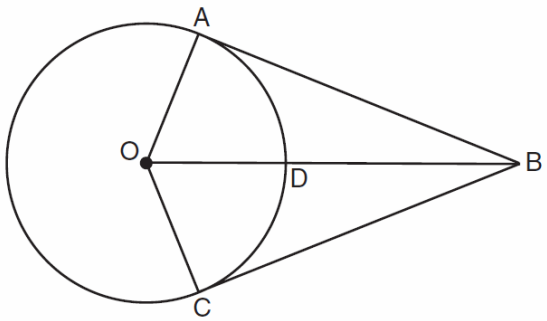

If $AD = 8$ and $DC = 10$, determine and state the length of $\overline{AB}$.

Question 6.

Two prisms with equal altitudes have equal volumes. The base of one prism is a square with a side length of 5 inches. The base of the second prism is a rectangle with a side length of 10 inches. Determine and state, in inches, the measure of the width of the rectangle.

Question 7.

As shown in the diagram below, $\overline{BO}$ and tangents $\overline{BA}$ and $\overline{BC}$ are drawn from external point $B$ to circle $O$. Radii $\overline{OA}$ and $\overline{OC}$ are drawn.




If $OA = 7$ and $DB = 18$, determine and state the length of $\overline{AB}$.

Question 8.

Triangle $RST$ is similar to $\triangle XYZ$ with $RS = 3$ inches and $XY = 2$ inches. If the area of $\triangle RST$ is 27 square inches, determine and state the area of $\triangle XYZ$, in square inches.

Question 9.

Using a compass and straightedge, construct an equilateral triangle with $\overline{AB}$ as a side.

Using this triangle, construct a 30° angle with its vertex at A.
[Leave all construction marks.]

**Question 10.**

The graph below shows $\triangle A'B'C'$, the image of $\triangle ABC$ after it was reflected over the $y$-axis.

Graph and label $\triangle ABC$, the pre-image of $\triangle A'B'C'$.

Graph and label $\triangle A''B''C''$, the image of $\triangle A'B'C'$ after it is reflected through the origin.

State a single transformation that will map $\triangle ABC$ onto $\triangle A''B''C''$.