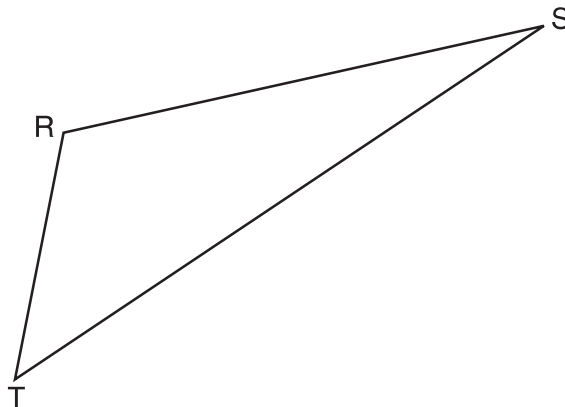
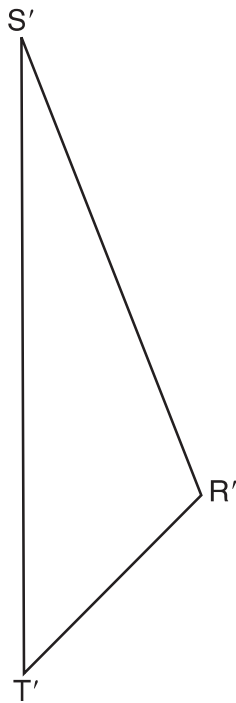


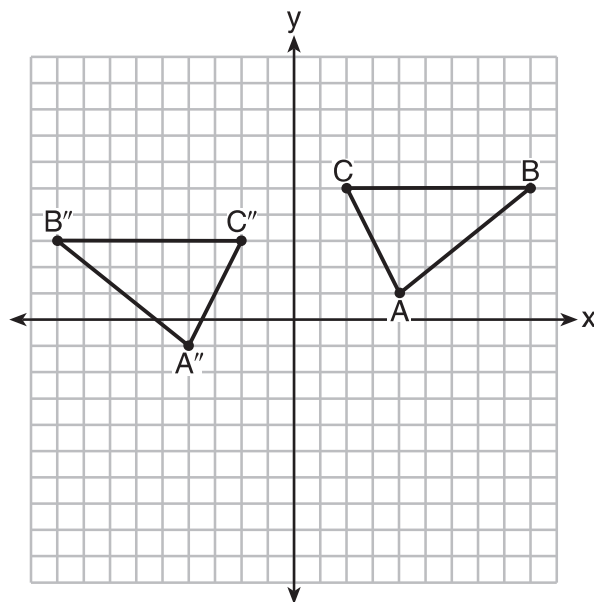
Part II

Answer all 7 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [14]

25 Using a compass and straightedge, construct the line of reflection over which triangle RST reflects onto triangle $R'S'T'$. [Leave all construction marks.]



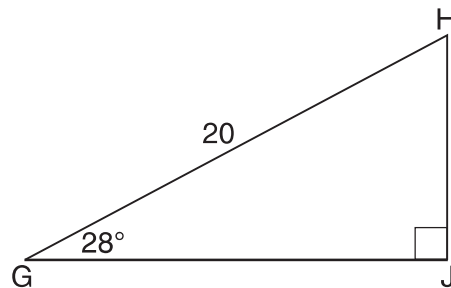
26 The graph below shows $\triangle ABC$ and its image, $\triangle A''B''C''$.



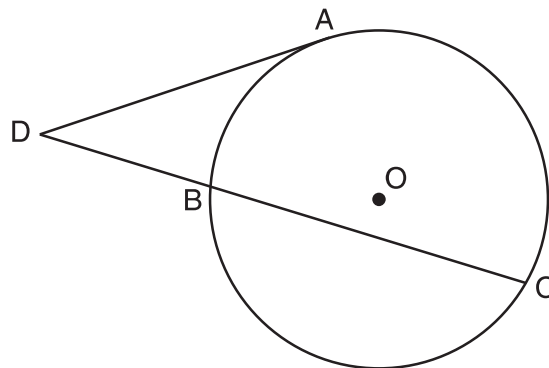
Describe a sequence of rigid motions which would map $\triangle ABC$ onto $\triangle A''B''C''$.

27 When instructed to find the length of \overline{HJ} in right triangle HJG , Alex wrote the equation $\sin 28^\circ = \frac{HJ}{20}$ while Marlene wrote $\cos 62^\circ = \frac{HJ}{20}$. Are both students' equations correct?

Explain why.

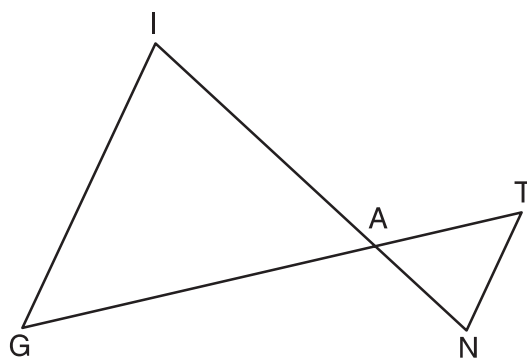


28 In the diagram below, tangent \overline{DA} and secant \overline{DBC} are drawn to circle O from external point D , such that $\widehat{AC} \cong \widehat{BC}$.



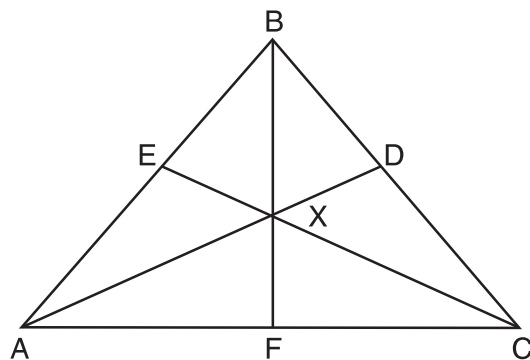
If $m\widehat{BC} = 152^\circ$, determine and state $m\angle D$.

29 In the diagram below, \overline{GI} is parallel to \overline{NT} , and \overline{IN} intersects \overline{GT} at A .



Prove: $\triangle GIA \sim \triangle TNA$

30 In the diagram below of isosceles triangle ABC , $\overline{AB} \cong \overline{CB}$ and angle bisectors \overline{AD} , \overline{BF} , and \overline{CE} are drawn and intersect at X .



If $m\angle BAC = 50^\circ$, find $m\angle AXC$.

- 31** In square $GEOM$, the coordinates of G are $(2, -2)$ and the coordinates of O are $(-4, 2)$. Determine and state the coordinates of vertices E and M .
[The use of the set of axes below is optional.]

