Lesson Summary

The following conditions determine a unique triangle:

- Three sides.
- Two sides and included angle.
- Two angles and the included side.
- Two angles and the side opposite.

Problem Set

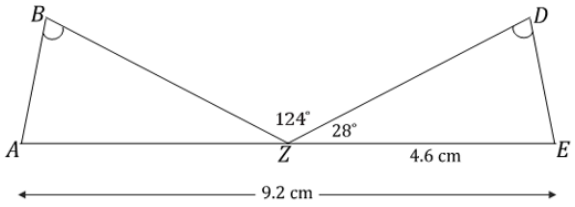
1. In $\triangle FGH$, $\angle F = 42°$ and $\angle H = 70°$. $FH = 6$ cm. Draw $\triangle F'G'H'$ under the same condition as $\triangle FGH$. Leave all construction marks as evidence of your work, and label all side and angle measurements.

   What can you conclude about $\triangle FGH$ and $\triangle F'G'H'$? Justify your response.

2. In $\triangle WXY$, $\angle Y = 57°$ and $\angle W = 103°$. Side $YX = 6.5$ cm. Draw $\triangle W'X'Y'$ under the same condition as $\triangle WXY$. Leave all construction marks as evidence of your work, and label all side and angle measurements.

   What can you conclude about $\triangle WXY$ and $\triangle W'X'Y'$? Justify your response.

3. Points A, Z, and E are collinear, and $\angle B = \angle D$. What can be concluded about $\triangle ABZ$ and $\triangle EDZ$? Justify your answer.



4. Draw $\triangle ABC$ so that $\angle A$ has a measurement of $60°$, $\angle B$ has a measurement of $60°$, and $\overline{AB}$ has a length of 8 cm. What are the lengths of the other sides?

5. Draw $\triangle ABC$ so that $\angle A$ has a measurement of $30°$, $\angle B$ has a measurement of $60°$, and $\overline{BC}$ has a length of 5 cm. What is the length of the longest side?

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