Module 11.3 and 11.4   Name_____

1. Devon says that triangles *TUV* and *XYZ* are similar because $\dfrac{TU}{XY} = \dfrac{UV}{YZ} = \dfrac{XZ}{TV}$.

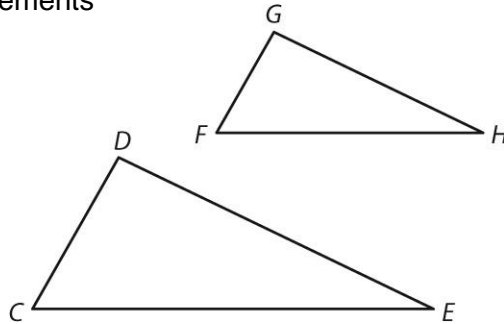   What is wrong with his reasoning?

   _____

Fill in the blanks to complete the statements about similar figures.

2. Triangles *CDE* and *FGH* are similar. Write three statements about their angle measures.

   m∠C = _____   m∠D = _____   m∠E = _____

3. Complete the proportions relating the side lengths of triangles *CDE* and *FGH*.

   $\dfrac{CD}{FG} = \dfrac{}{GH}$ $\dfrac{CE}{FH} = \dfrac{DE}{}$ $\dfrac{CD}{CE} = \dfrac{}{FH}$

Use the diagram for Problems 4 and 5.

4. In the diagram of the tandem bike, $\overline{AE} \parallel \overline{BD}$. Explain why $\triangle CBD \sim \triangle CAE$.

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5. Find *CE* to the nearest tenth. Show your work.

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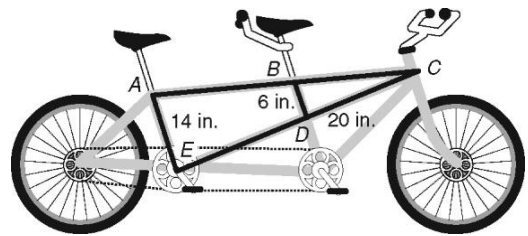
For Problems 6–9, two similar figures are named. Answer the questions based on the information provided. (Draw sketches of the figures for 6-8)
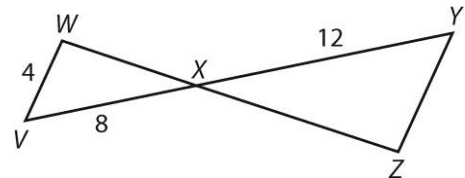
6. *ABCD* ~ *EFGH*. Both figures are rectangles.

   $\dfrac{BC}{FG} = 3$. Side $\overline{EF}$ measures 5 <u>inches</u>. What is the length of $\overline{AB}$? _____

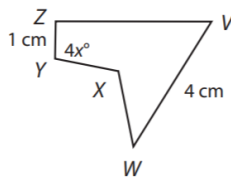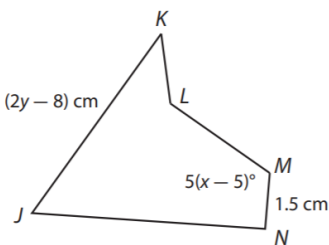7. $\triangle HIJ \sim \triangle KLM$. Angles *J* and *M* are right angles. m∠H = 60°. What is the measure of ∠L? _____

8. $\triangle PQR \sim \triangle STU$ PQ = 7. ST = 28. PR = 6. What is SU? _____

9. $\triangle VWX \sim \triangle YZX$ is shown. Knowing the measures given in the figure, what is *YZ*? _____

10. $JKLMN \sim VWXYZ$ Find x and y. Show work.

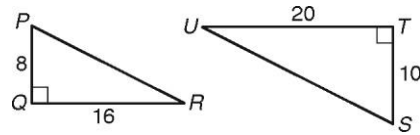 $x =$ _____ , $y =$ _____

11. Figure *CDEF* is similar to figure *KLMN*. Which statements are false? Explain why.

    1. $\dfrac{CD}{KL} = \dfrac{EF}{MN}$

    2. $\dfrac{CF}{KN} = \dfrac{EF}{MN}$

    3. $\dfrac{DE}{LM} = \dfrac{CF}{KN}$

    4. $\dfrac{LM}{DE} = \dfrac{KL}{CD}$

    5. $\dfrac{LM}{DE} = \dfrac{KN}{CD}$

For Problem 12, name one pair of congruent angles to show that the triangles are similar by the Side-Angle-Side (SAS) Similarity Theorem.
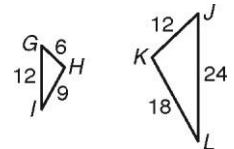
12. Congruent angles: _____

$$\frac{PQ}{ST} = \underline{\quad} = \underline{\quad} \qquad \frac{QR}{TU} = \underline{\quad} = \underline{\quad}$$
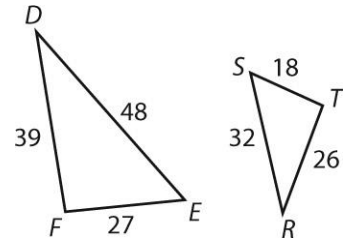

For Problems 13 and 14, substitute side lengths into the ratios to show that the triangles are similar by the Side-Side-Side (SSS) Similarity Theorem.
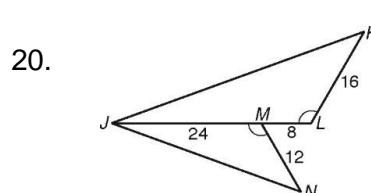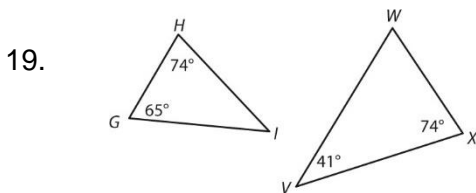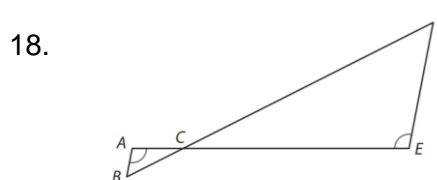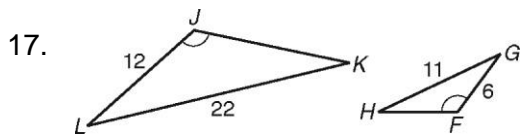
13. $\dfrac{GH}{JK} = \underline{\quad} = \underline{\quad} \qquad \dfrac{HI}{KL} = \underline{\quad} = \underline{\quad} \qquad \dfrac{GI}{JL} = \underline{\quad} = \underline{\quad}$

14. $\dfrac{DE}{RS} = \underline{\quad} = \underline{\quad} \qquad \dfrac{EF}{ST} = \underline{\quad} = \underline{\quad} \qquad \dfrac{DF}{RT} = \underline{\quad} = \underline{\quad}$

For 15-20, determine, if possible, whether the following pairs of triangles are similar. If similar, write AA ~, SSS ~, or SAS ~(the postulate or theorem you used to conclude that they are similar.) Also include the <u>similarity statement</u>. If it is not possible to conclude that they are similar, write no conclusion.

15.

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16.

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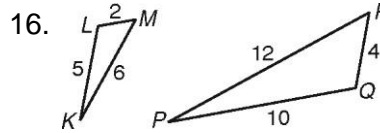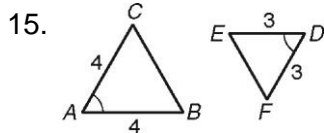
Explain why the triangles are similar and find the stated length. Show Work.

21. *DE*

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