Determining Measures Using Similarity

The same ideas you used to determine the parts of congruent triangles apply to similar triangles. The statement tells you which **angles are congruent**, and which **sides are similar**. Example: *RSTMNP*

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| *Angles are easy…they’re just congruent.*  *RSTMNP* | *Sides are* ***similar****, which means we have to set up fractions.*  *We have to go by the written order, because we don’t know* ***small, medium,*** *and* ***large****.*  ***First triangle in the statement always goes on the top!***  *RSTMNP* | | |
|  | *RS is similar to MN* | *ST is similar to NP* | *RT is similar to MP* |

Remember, if the sides are similar, then the fractions are equal.

They also equal the **scale** fraction, which is sometimes called the “**similarity ratio**.”

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| **EXAMPLE**  *DEFIHG.*    *D* is *I*, *E* is *H*, and *F* is *G.*  So,  Based on the *written order*, my fractions are: | 1. *JKLNMP.* | 2. *QRSVUT.* |
| **EXAMPLE**  *ABCZYX.*    *A* is *Z, B* is *Y*, and *C* is *X.*  So,  The fractions are:  *I’m looking for BC, so that’s what I use.* | 3. *QRSPNM.* | 4.*TWVZYX.* |
| **EXAMPLE**  *MNPRQP.* ,  , and .  *M* is *R, N* is *Q,* and *P* is *P.*  The fractions are: | 5. *ABCFGH.* ,  , and . | 6. *RATBAN.* ,  , and . |
| **EXAMPLE**  *BCDEFG*. If the similarity ratio (or scale) is , what is *CD*?    The fractions are:   |  |  |  |  | | --- | --- | --- | --- | | SCALE |  |  |  | |  |  |  |  |   *Since I want CD, I’ll use that fraction.* | 7. *DRTSGP*. If the similarity ratio (or scale) is , what is *GP*? | 8. *ABC WXY*. If the similarity ratio (or scale) is , what is *WY*? |
| **EXAMPLE**  *LMNPQR*. If the similarity ratio (or scale) is , what is *PR*?    The fractions are:   |  |  |  |  | | --- | --- | --- | --- | | SCALE |  |  |  | |  |  |  |  |   *Since I want PR, I’ll use that fraction.* | 9. *HUNGRY*. If the similarity ratio (or scale) is , what is *RY*? | 10. *FORMED*. If the similarity ratio (or scale) is , what is *FR*? |