GSE Geometry **Unit 2B and 2C Review Sheet** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Congruency and Similarity

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| **Topic**: Corresponding Parts | **Things to Remember**:   * Triangle statement must have the SAME ORDER (follow congruent marks!) |
| **Examples**: | |
|  | 1. , find and . |
| 3.  Image result for congruent triangles | 4. |
| **Topic**: Triangle Congruency | **Things to Remember**:   * Triangles can be congruent 5 different ways: SSS, SAS, AAS, ASA, and HL |
| **Examples**: | |
| 5. by \_\_\_\_\_\_\_  C  G  F  I  H | 6. by \_\_\_\_\_\_  A  B  C  D |
| 7. and bisect each other.  by \_\_\_\_\_\_ | 8. Are these triangles congruent? Why or why not? |
| 9. by \_\_\_\_\_\_ | 10. by \_\_\_\_\_\_ |
| 11. **Given**: and  What OTHER piece of information is needed to show and by ASA?  Image result for triangle abc and xyz | 12. **Given**: and  What OTHER piece of information is needed to show and by AAS?  Image result for triangle abc and xyz |
| 13. **Given**: and  What OTHER piece of information is needed to show and by SAS?  Image result for triangle abc and xyz | 14. **Given**: are right angles  What OTHER piece of information is needed to show and by HL?  Related image |

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| **Topic**: Proofs | **Things to Remember**:   * State what is given FIRST * MARK YOUR DIAGRAM! * Step 1 – Write down the givens * Step 2 – Make any marks that you know are congruent (reflexive property, vertical angles, alternate interior angles) * Step 3 – **BUILD OFF YOUR GIVENS; YOU CANNOT ASSUME ANYTHING IF IT IS NOT TOLD TO YOU!!!** * Step 4– Statement will always be showing the Triangles are (SSS, SAS, ASA, AAS, HL * Step 5 – AFTER two triangles are congruent, then you can use CPCTC |
| **Examples**:  SSS SAS ASA AAS HL CPCTC Vertical Angles are  Reflexive Property Alternate Interior Angles  All Right Angles are  Transitive Property Definition of a Midpoint Given  Definition of Bisector Definition of Perpendicular Definition of congruence | |
| 15. If BD and CA are perpendicular, what can you assume?  Image result for HL congruence | 16. Using the figure on the left, if BD bisects AC, what can you assume? |
| 17. Using the figure on the left, if BD bisects, what can you assume? |
| 18. Given: , ,  and  Prove:   |  |  | | --- | --- | | **Statements** | **Reasons** | | 1. | 1. | | 2. | 2. | | 3. | 3. | | 4. | 4. | | 5. | 5. | | 6. | 6. | | 7. | 7. | | 19. Given: and bisect  each other  Prove:   |  |  | | --- | --- | | **Statements** | **Reasons** | | 1. | 1. | | 2. | 2. | | 3. | 3. | | 4. | 4. | | 5. | 5. | | 6. | 6. | |
| **Topic**: Dilations | **Things to Remember**:   * Dilations needs TWO components: scale factor (k) and a center of dilation * K = scale factor * K > 1 🡪 Enlargement * K < 1 🡪 Reduction * K = 1 🡪 Congruence |
| **Examples**: | |
| 20. Describe what type of dilation would occur with each k-value and **WHY**.  a. k =  c. k =  d. k = | |
| 21.    a. Label the vertices ABC.  b. Dilate with k =1/2 centered at the origin.  c. What type of dilation occurred? | 22.    a. Label the vertices ABCD.  b. Dilate with k = 2 centered at the origin.  c. What type of dilation occurred? |
| 23.  a. Find the center of dilation.  b. Calculate the scale factor. | 24.  a. Find the center of dilation.  b. Calculate the scale factor. |
| **Topic:** Triangle Proportionality | **Things to Remember**:   * OR ANYWAY THAT KEEPS THE SAME ORDER!! * ONLY WHEN TWO SIDES ARE PARALLEL |
| **Examples** | |
| 25. Solve for x.  Image result for triangle proportionality | 26. Solve for x  Image result for two-transversal proportionality corollary |
| 27. , , and  Solve for.  Image result for triangle proportionality | 28. Solve for the missing length |
| 29. Determine if is parallel to  AD = 5, DB = 15, AE = 3, and EC = 9  See the source image | 30. Determine if is parallel to  AD = 2, DB = 13, AE = 4, and EC = 8  See the source image |
| **Topic:** Similar Figures | **Things to Remember**:   * ALL angles are congruent * ALL sides are proportional (have the same scale factor) * There are ONLY 3 ways to prove two triangles are similar: SSS Similarity, SAS Similarity, and AA Similarity |
| 31. Given  Solve for.  Image result for SSS Similarity | 32. Given  Solve for x. |
| 33. Solve for x if the large triangle is similar to the smaller triangle. | 1. Solve for x and y.   See the source image |
| 1. A telephone pole is 10 meters tall casts a shadow 8 meters long. A tree nearby casts a shadow 14 meters long. How tall is the tree? | 36. A map has a scale of 3 cm : 18 miles. If Marietta and Kennesaw are 7.5 miles apart, how many centimeters are the two cities apart on the map? |
| 37. The area of an old picture is 24.5 in2. If you want to enlarge the picture 3 times, what would the area be of the new picture? | 38. Triangles IJK and TUV are similar. The length of the sides of IJK are 40, 50, and 24. The length of the longest side of TUV is 275, what is the perimeter of TUV? |
| 39. Determine if the triangles are similar. If the figures are similar, write a similarity statement.  See the source image | 40. Determine if the triangles are similar. If the figures are similar, write a similarity statement.  Image result for SSS Similarity |
| 41. Determine if the triangles are similar. If the figures are similar, write a similarity statement.  Image result for SSS Similarity | 42. Determine if the triangles are similar. If the figures are similar, write a similarity statement.  Related image  4 |