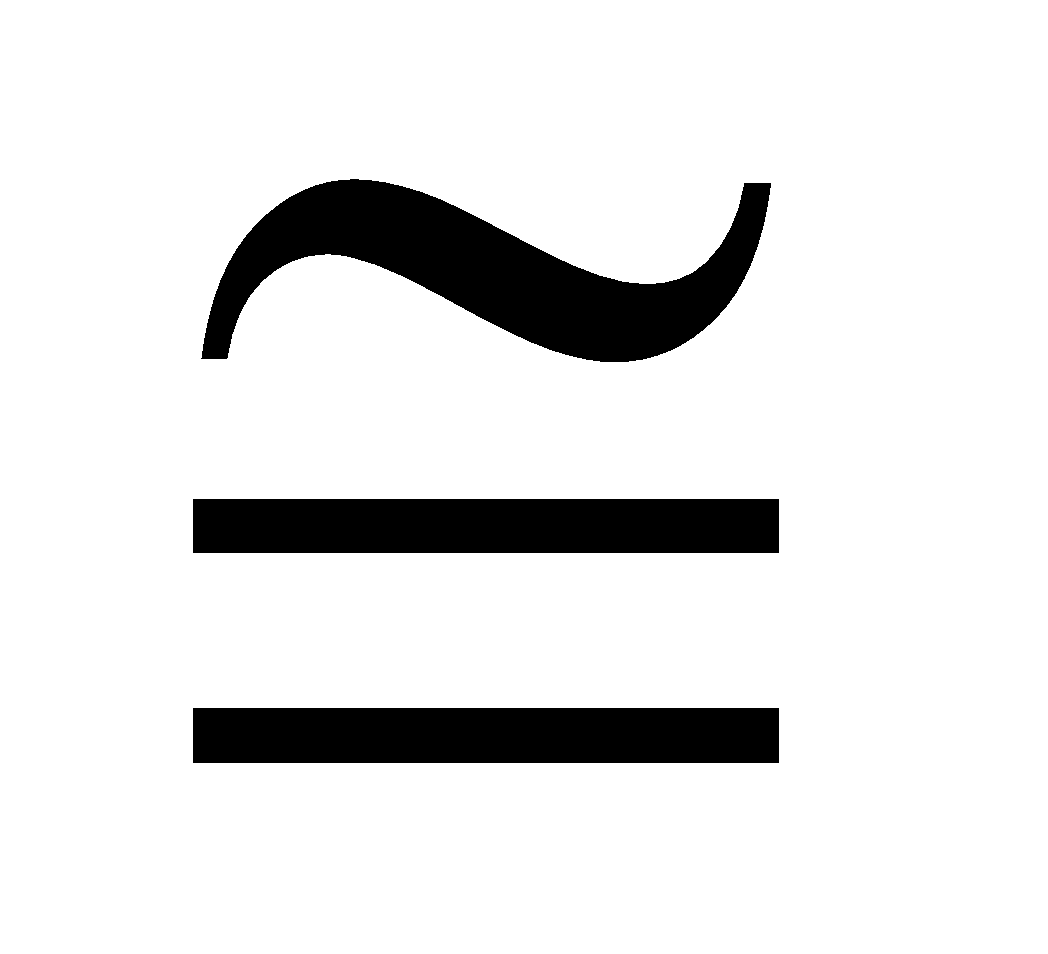
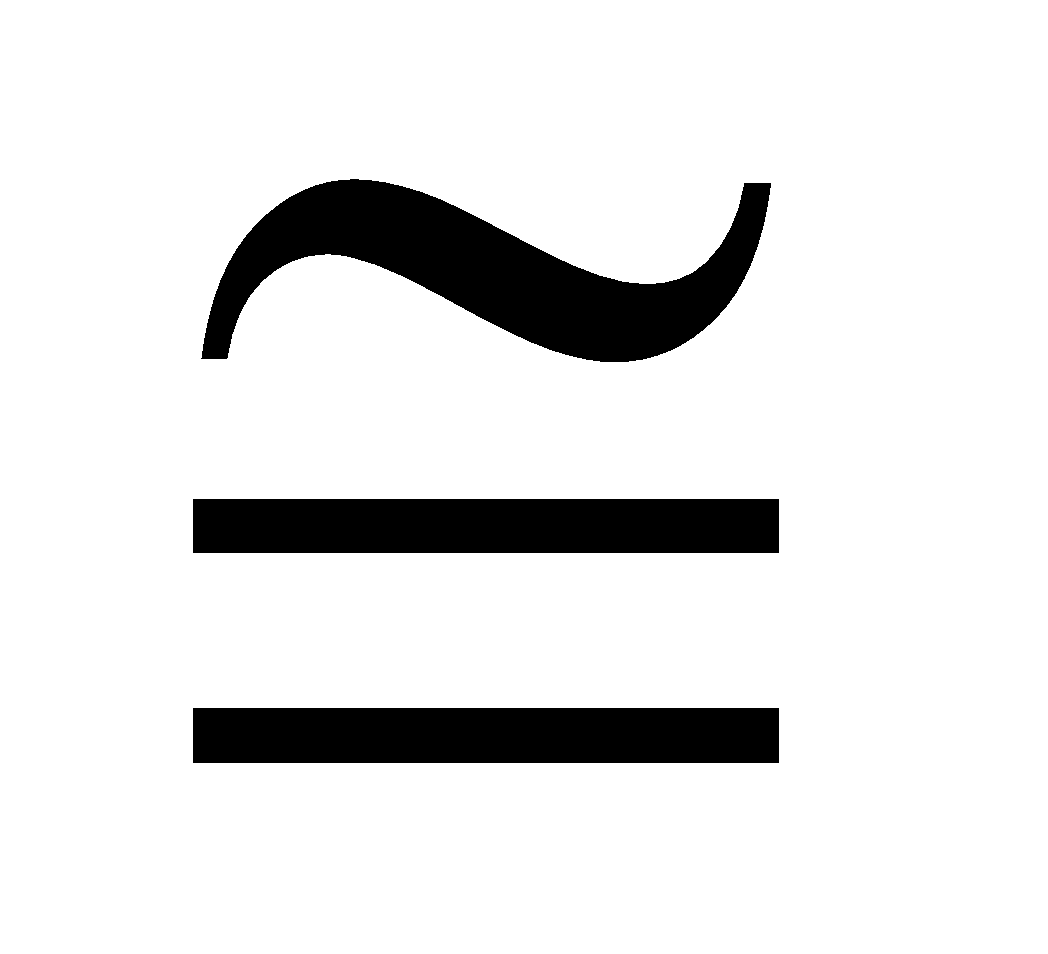
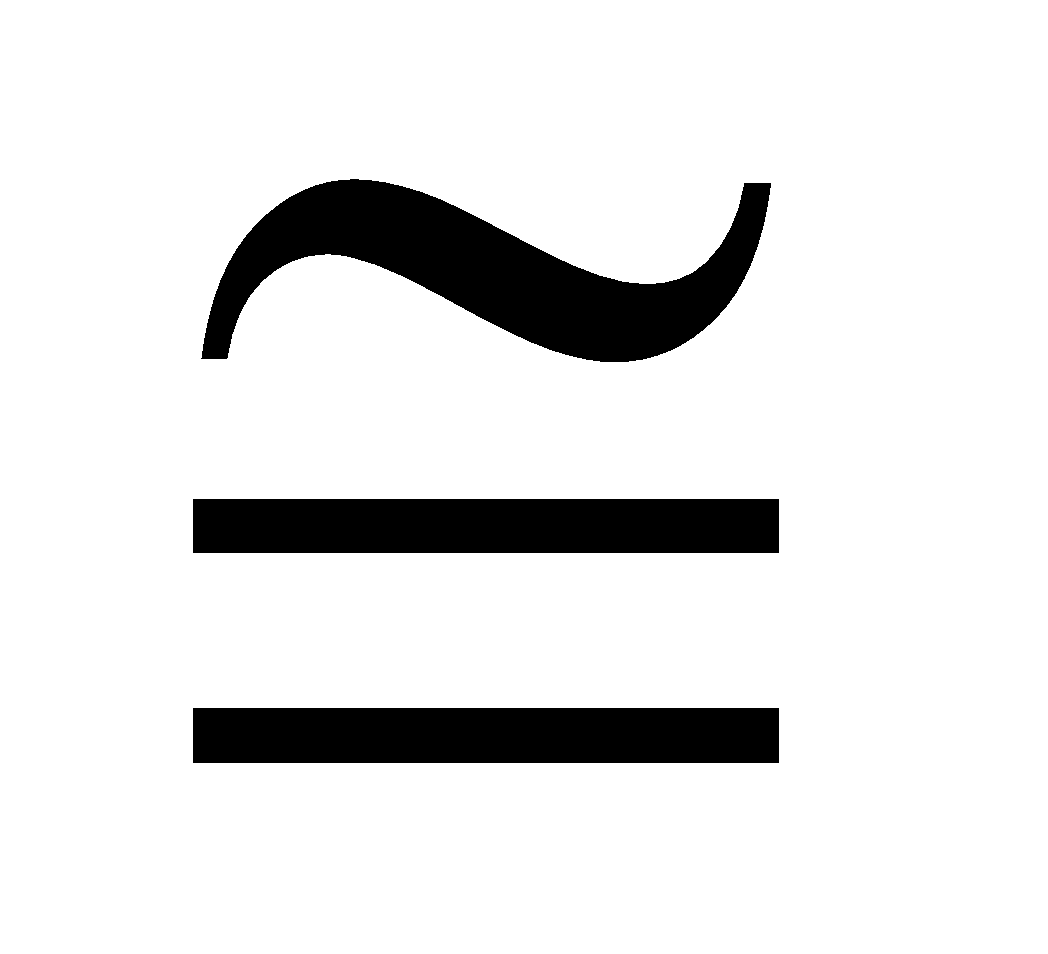
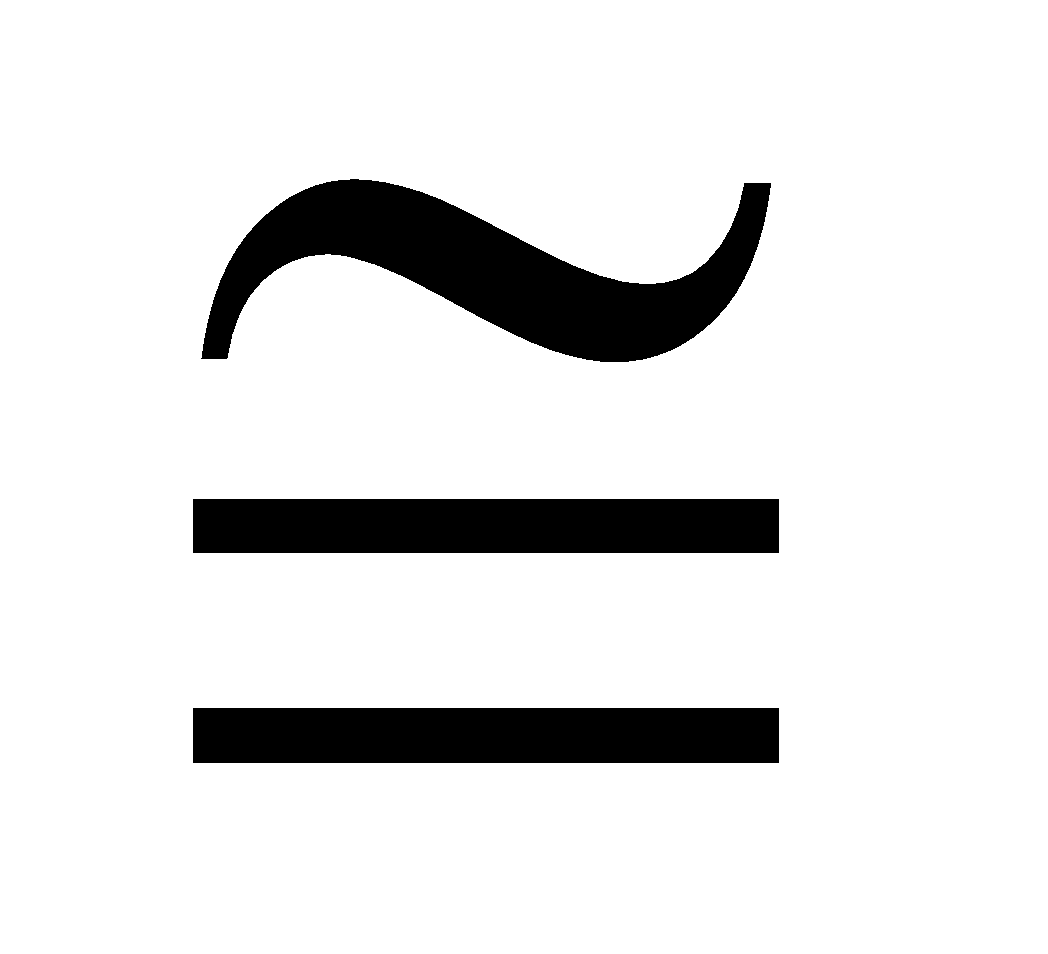
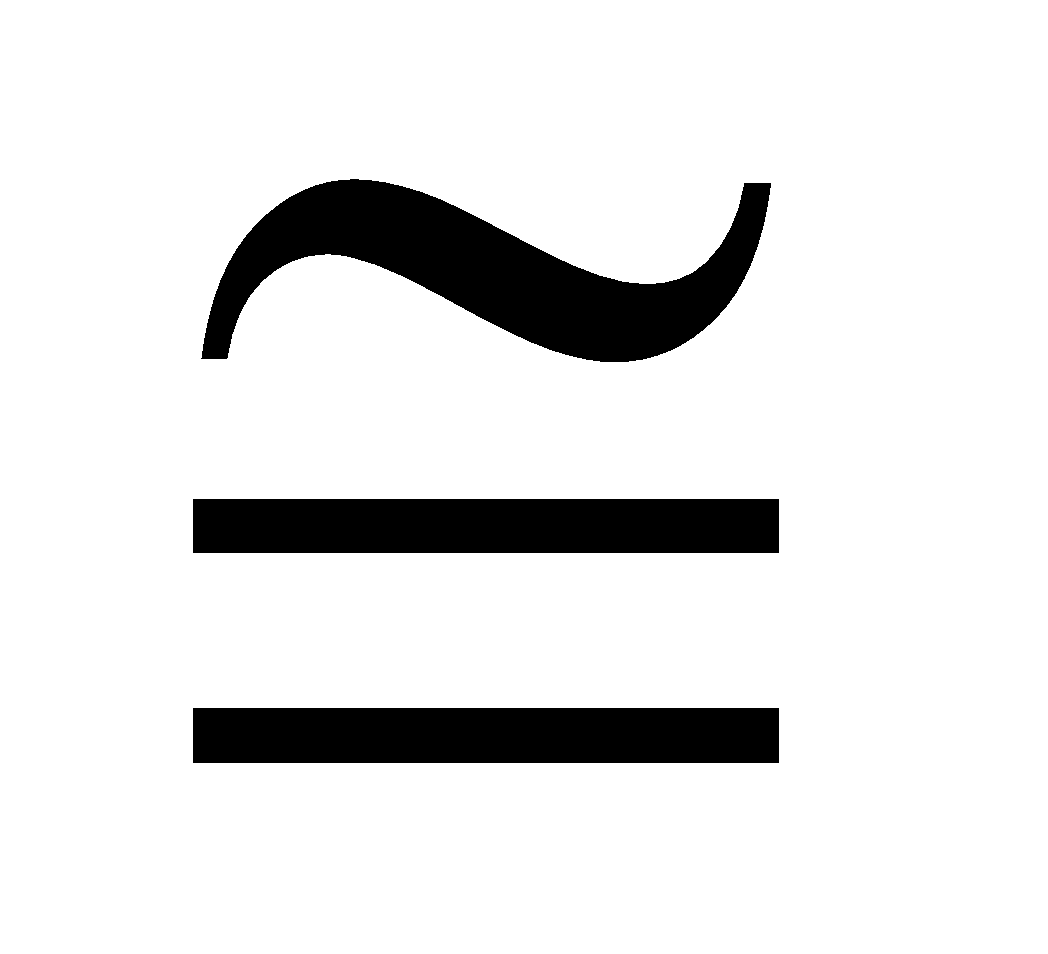
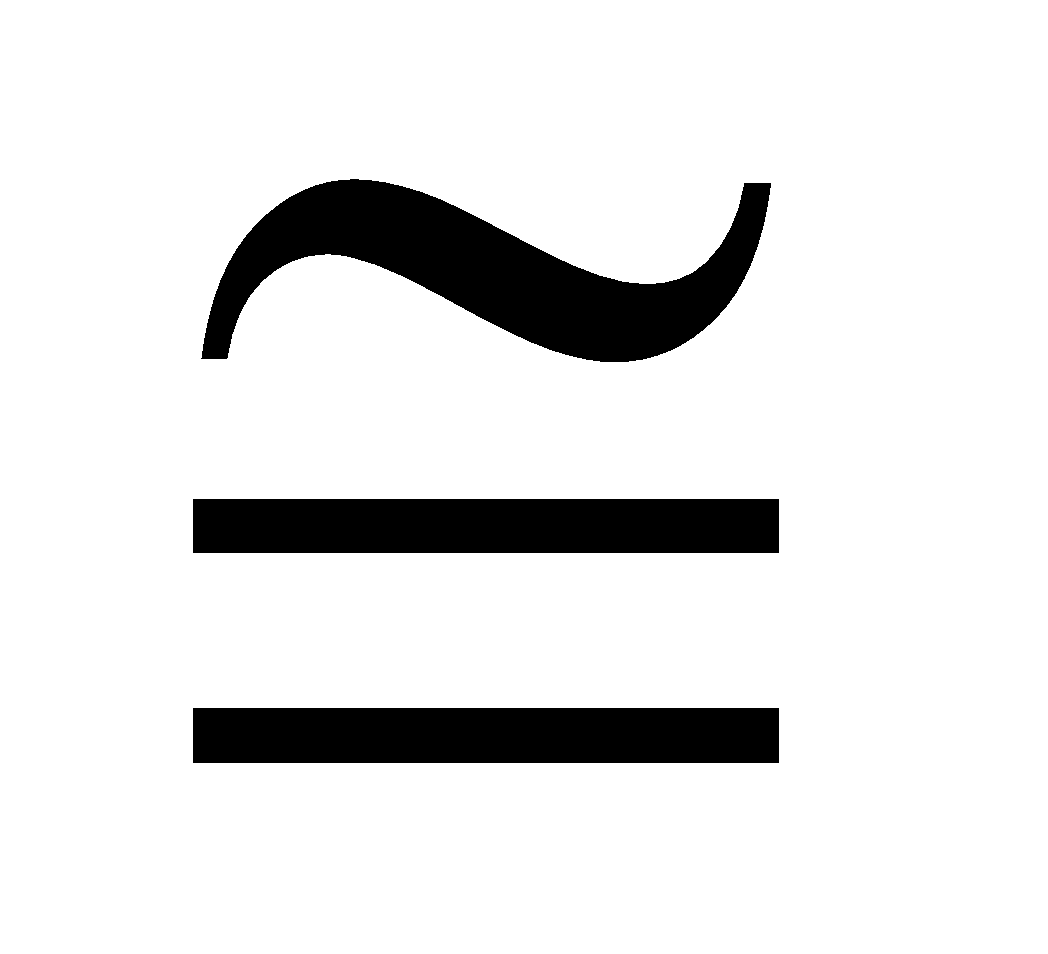
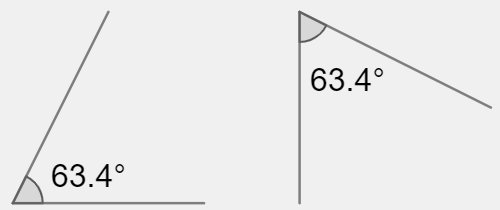
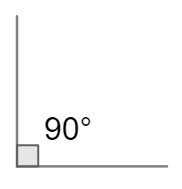
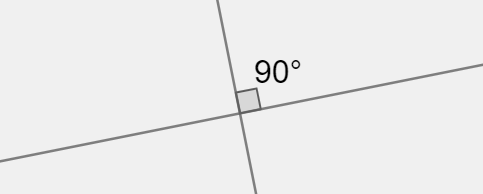
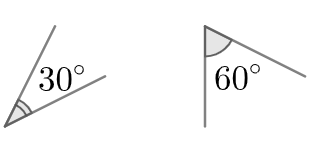
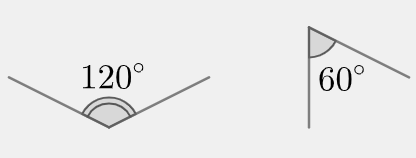
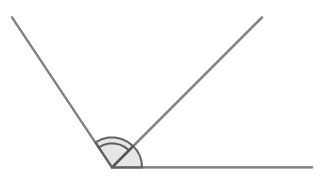
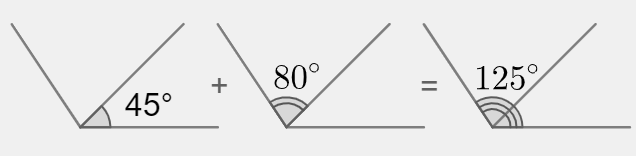
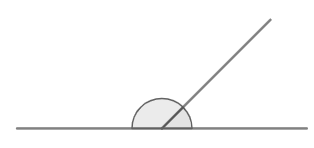
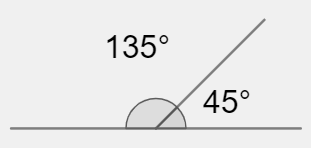
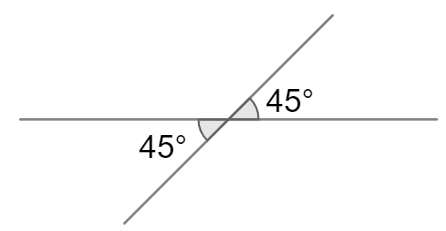
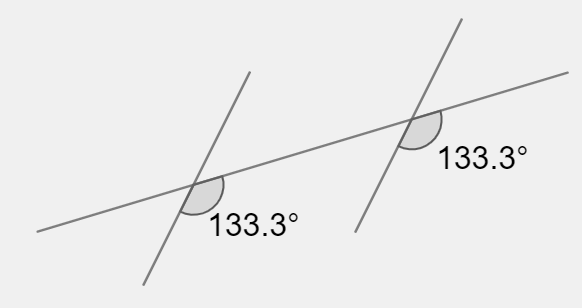
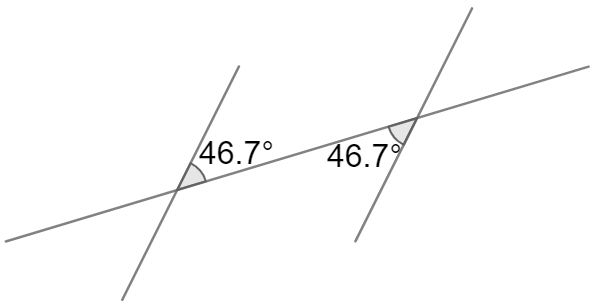
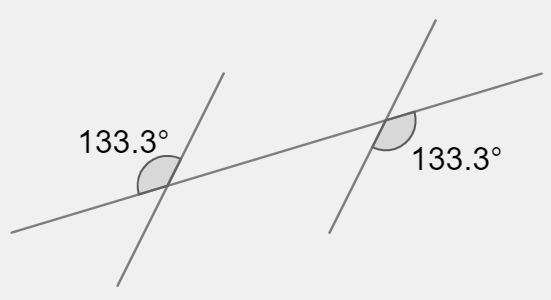
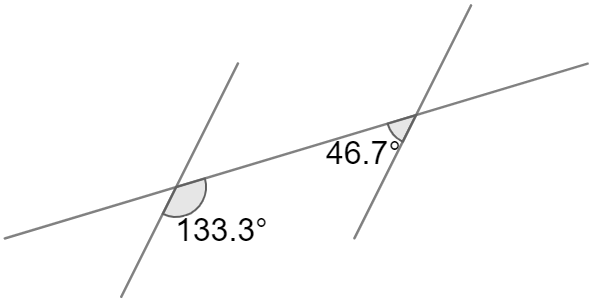
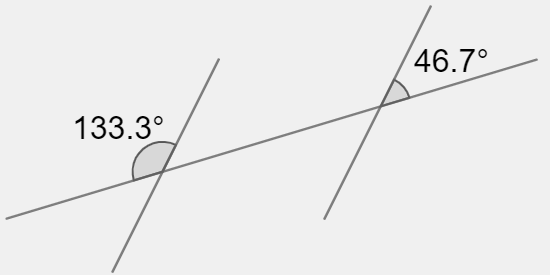
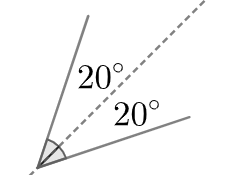
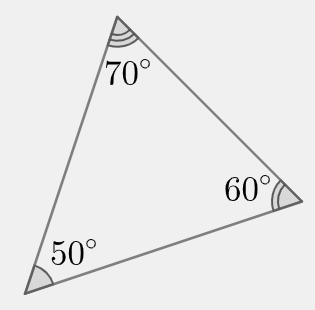
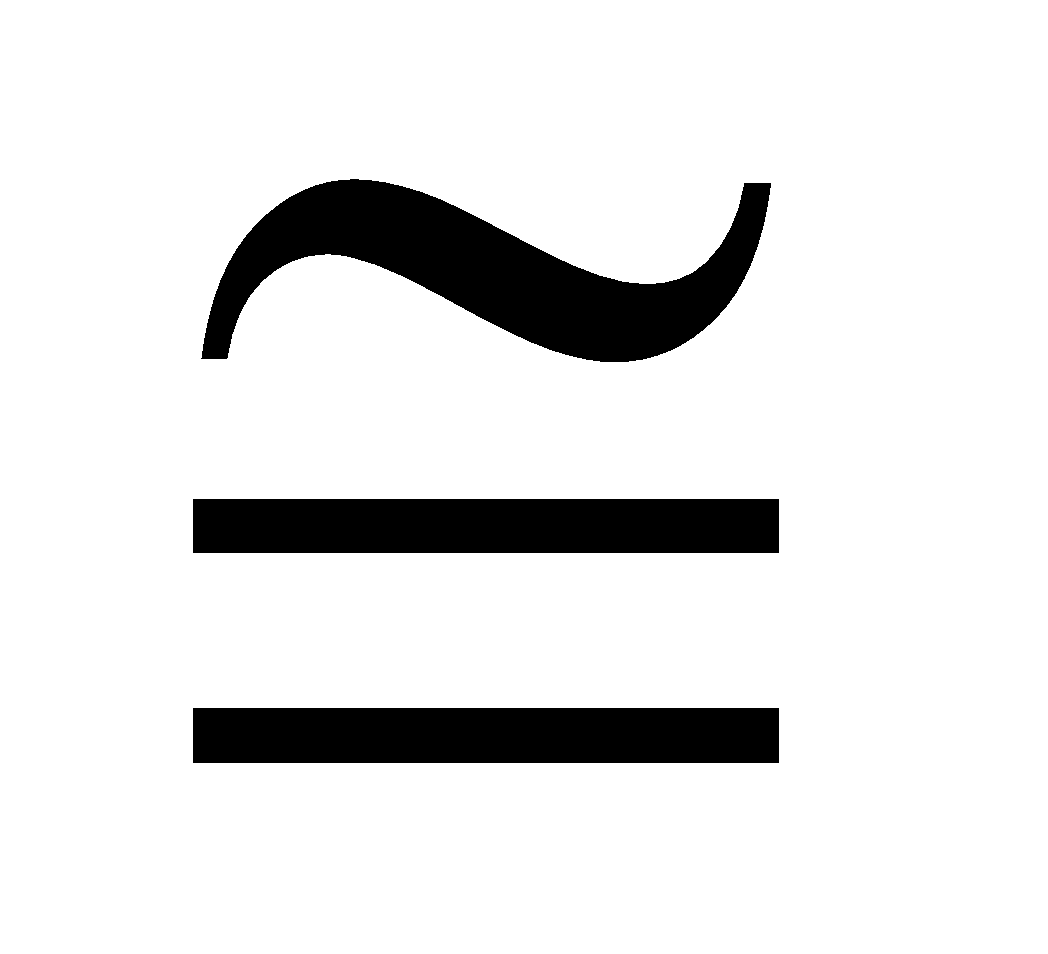
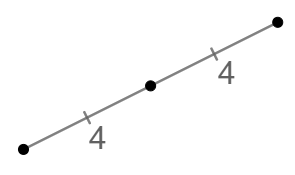
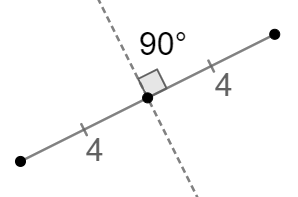
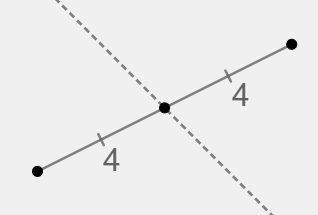
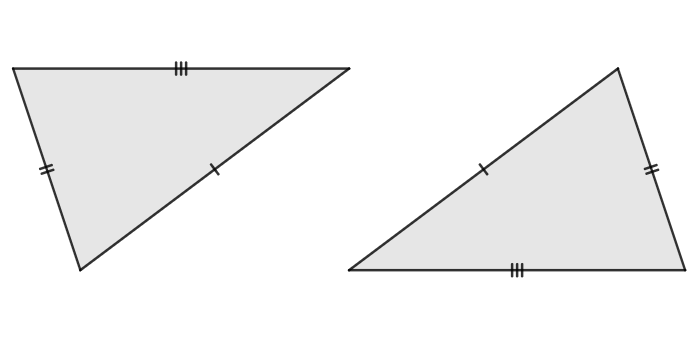
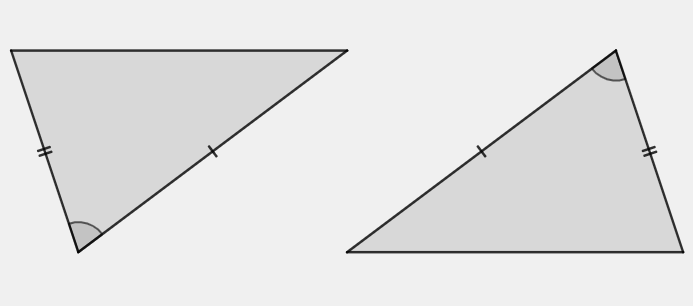
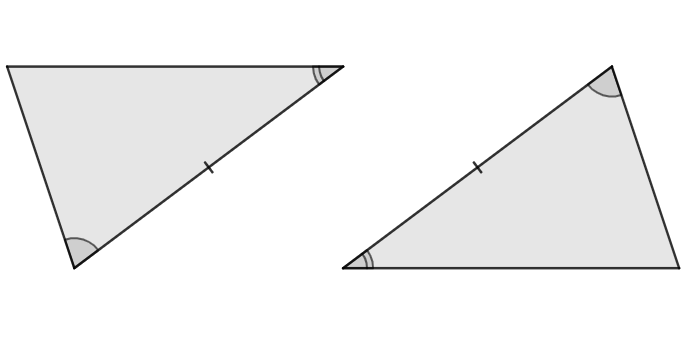
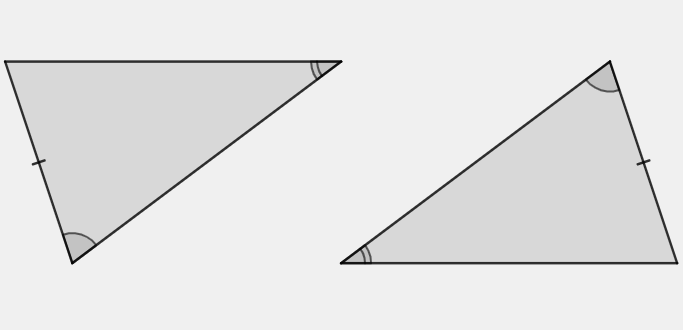
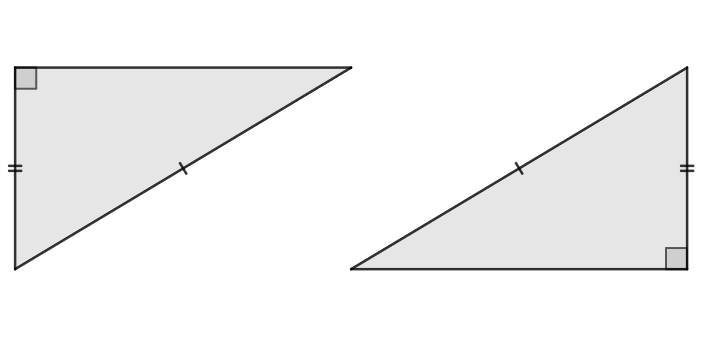
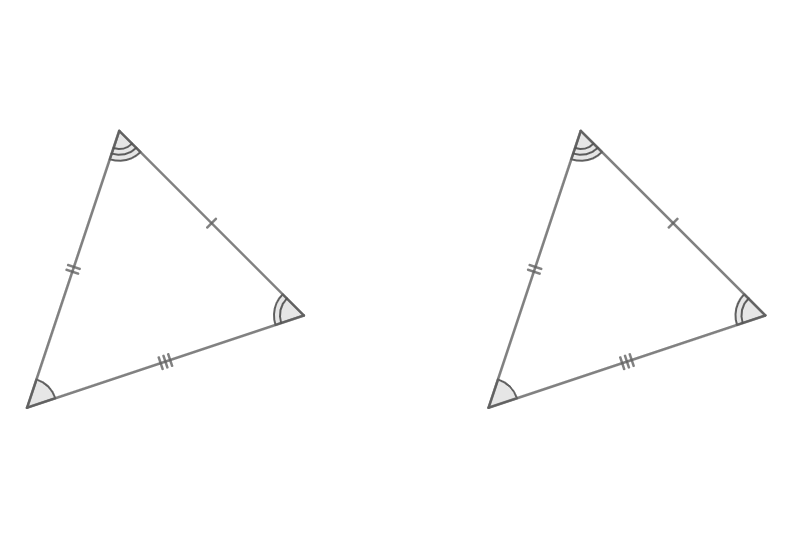
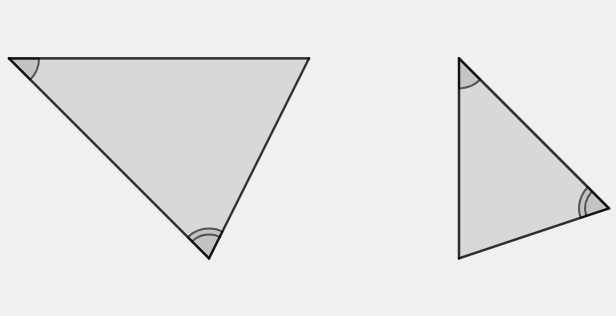
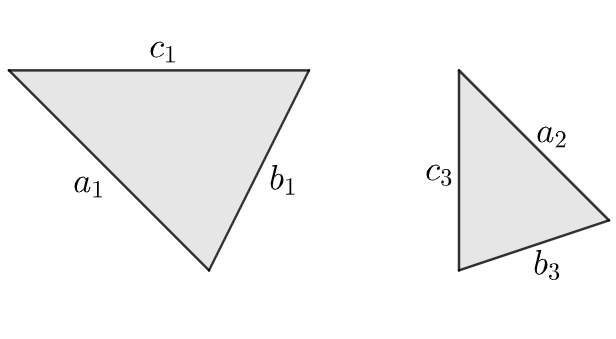
**Proof Properties / Theorems / Reasons**

1. **Given** The first statement(s) you already know because the problem told you.
2. **Reflexive Property of Equality**
3. **Symmetric Property of Equality** If , then .
4. **Transitive Property of Equality** If and , then .
5. **Addition Property of Equality** If , then .
6. **Subtraction Property of Equality** If , then .
7. **Multiplication Property of Equality** If , then .
8. **Division Property of Equality** If and , then .
9. **Substitution** If , then may be substituted for anywhere it appears.
10. **Simplify** When you do very simple math like when combining terms.
11. **Reflexive Property of Congruence** 
12. **Symmetric Property of Congruence** If , then .
13. **Transitive Property of Congruence** If  and , then .
14. **Defn. of Congruent Angles** Angles are congruent if and only if they are equal in measure.
15. **Defn. of Right Angle** Right angles are angles with a measure of .
16. **Defn. of Perpendicular** Two lines are perpendicular if they intersect at a right angle.
17. **Defn. of Complementary Angle** Two angles that add up to . ()
18. **Defn. of Supplementary Angle** Two angles that add up to . ()
19. **Defn. of Adjacent Angle** A pair of angles which only share one side and do not overlap.
20. **Angle Addition Postulate** If B is in the interior of , then .
21. **Defn. of Linear Pair** A pair of adjacent angles that form a straight line when combined.
22. **Linear Pair Postulate** Linear pair angles are supplementary.
23. **Vertical Angle Theorem (VAT)** Vertical angles are congruent.
24. **Corresponding Angles Postulate** Corresponding angles on parallel lines are congruent..
25. **Alternate Interior Angles Theorem** Alternate interior angles on parallel lines are congruent.
26. **Alternate Exterior Angles Theorem** Alternate exterior angles on parallel lines are congruent.
27. **Consecutive Interior Angles Theorem** Consecutive interior angles on parallel lines are supplementary..
28. **Consecutive Exterior Angles Theorem** Consecutive exterior angles on parallel lines are supplementary.
29. **Defn. of Angle Bisector** A line that bisects an angle, divides it into two congruent halves.
30. **Triangle Angle Sum Theorem** The sum of all the interior angles of a triangle is .
31. **Defn. of Congruent Segments** Segments are congruent if and only if they are equal in length.
32. **Segment Addition Postulate** If is on , then .
33. **Defn. of Midpoint** If is the midpoint of , then .
34. **Defn. of Segment Bisector** A line that bisects a segment, divides it into two congruent halves.
35. **Defn. of Perpendicular Bisector** A perpendicular line that bisects a segment at a right angle.
36. **SSS Triangle Congruence Theorem** Triangles are congruent if all three corresponding sides are congruent.  
    
37. **SAS Triangle Congruence Theorem** Triangles are congruent if two corresponding sides are congruent and   
     their included angles are congruent.
38. **ASA Triangle Congruence Theorem** Triangles are congruent if two corresponding angles are congruent and   
     their included sides are congruent.
39. **AAS Triangle Congruence Theorem** Triangles are congruent if two corresponding angles are congruent and   
     one pair of corresponding non-included sides are congruent.
40. **HL Triangle Congruence Theorem** Right triangles are congruent if the hypotenuse of each is congruent   
     and one of the corresponding legs is congruent.
41. **Corresponding Parts of Congruent** If two triangles are congruent, then all their corresponding parts are  
    **Triangles are Congruent (CPCTC)** congruent as well.  
    
42. **AA Triangle Similarity Theorem** Triangles are similar if two corresponding angles are congruent.  
       
       
       
       
       
       
    
43. **SSS Triangle Similarity Theorem** Triangles are similar if three corresponding sides are proportional.  
     
44. **SAS Triangle Similarity Theorem** Triangles are similar if two corresponding sides are proportional and   
     their included angles are congruent.  
       
       
       
     