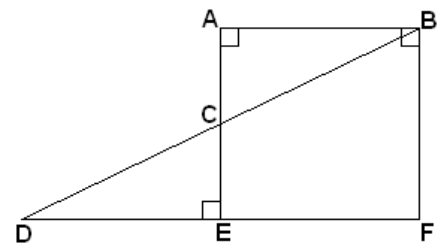


Simplify all answers and show your work!

1. Congruent triangles are the same _____ and have the same _____.
2. The sum of two supplementary angles is _____ degrees.
3. The sum of two complementary angles is _____ degrees.
4. For corresponding angles or alternate interior/exterior angles to be congruent, a transversal must cross what kind of lines? _____
5. What is the complement of an 82° angle?
6. What is the supplement of an 82° angle?

Use the figure to the right to answer problems 7 - 13. Assume that $\overline{AB} \parallel \overline{DF}$.

7. List two right angles. _____
8. List a pair of vertical angles. _____
9. If $m\angle ACB = 40^\circ$, find the measures of the following.
 - a) $m\angle DCE =$ _____
 - b) $m\angle CDE =$ _____
 - c) $m\angle ABC =$ _____
 - d) $m\angle FBC =$ _____
 - e) $m\angle BFE =$ _____
 - f) $m\angle ACD =$ _____
 - g) $m\angle BCE =$ _____

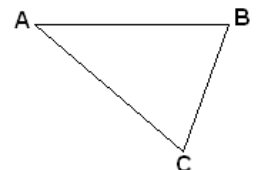


Fill in the blanks with corresponding, vertical, alternate exterior, alternate interior, complementary, or supplementary.

10. $\angle ACB$ and $\angle ACD$ are _____ angles.
11. $\angle ACB$ and $\angle DCE$ are _____ angles.
12. $\angle ABC$ and $\angle CBF$ are _____ angles.
13. $\angle ABC$ and $\angle CDE$ are _____ angles.

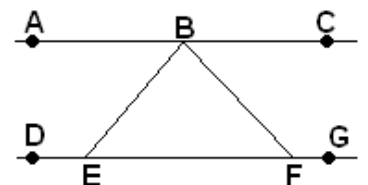
Given $\triangle ABC$ below where $m\angle ABC = 73^\circ$ and $m\angle BAC = 41^\circ$, answer problems 14 – 16.

14. Find $m\angle ACB =$ _____.
15. Which side is the longest? _____
16. Which side is the shortest? _____



17. Given the figure to the below where $\overline{AC} \parallel \overline{DG}$, $m\angle ABE = 3x^\circ$, $m\angle CBF = 3x^\circ$, and $m\angle EBF = 6x^\circ$, find the following.

- a) $x =$ _____
- b) $m\angle ABE =$ _____
- c) $m\angle EBF =$ _____
- d) $m\angle CBF =$ _____
- e) $m\angle BFE =$ _____
- f) $m\angle BEF =$ _____
- g) $m\angle BDE =$ _____
- h) $m\angle BFG =$ _____



Determine whether or not it is possible to make a triangle having the given side lengths. (Yes or No)

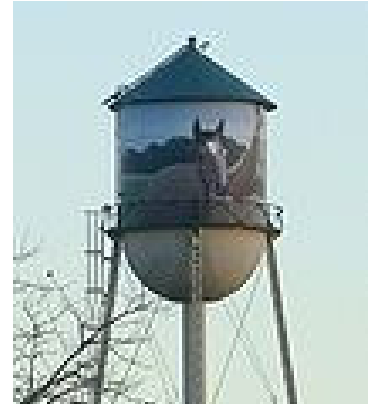
18. 2, 5, 9 _____ 19. 6.1, 5.9, 1.2 _____ 20. 18, 21, 39 _____

21. The measure of $\angle D$ is $(2x + 72)^\circ$ and the measure of $\angle R$ is $(3x + 123)^\circ$. If angles D and R are complementary angles, find the following:

a) $x =$ _____ b) $m\angle D =$ _____ c) $m\angle R =$ _____

22. The water tower to the right is made up of three different parts: a cylindrical body, a hemisphere base, and a cone topper. The tank has a diameter of 72 feet, the height of the cylindrical portion of the tank is 80 feet, and the conical topper has a height of 25 feet.

a) How much water will the hemispherical bottom hold? b) How much water will the cylindrical portion of the tank hold?



c) How much water will the conical topper hold?

d) What is the total volume of the water tower?

23. A rectangular concrete post in a building's hallway is 13 inches wide, 13 inches long, and 9 feet tall.

a) How many inches tall is the post? b) How many cubic inches of concrete is needed to build the post?

c) If the concrete is 0.25 lbs per in^3 , how much does the entire post weigh?

