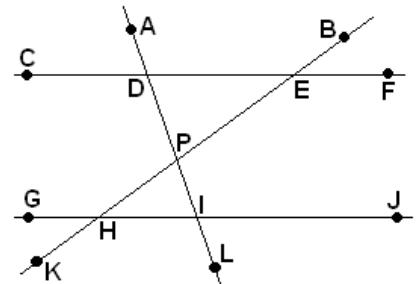


Simplify all answers and show your work!

1. Congruent triangles are the same _____ and have the same _____.
2. For corresponding angles or alternate interior/exterior angles to be congruent, a transversal must cross what kind of lines? _____
3. The sum of two supplementary angles is _____ degrees.
4. The sum of two complementary angles is _____ degrees.
5. What is the complement of a 38° angle?
6. What is the supplement of a 38° angle?

Use the figure to the right to answer problems 7 - 12. Assume that $\overline{CF} \parallel \overline{GJ}$.



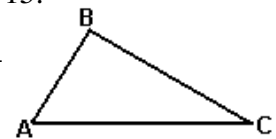
7. List a pair of vertical angles. _____
8. If $m\angle ADC = 76^\circ$ and $m\angle DEP = 35^\circ$, find the measures of the following.
 - a) $m\angle ADE =$ _____
 - b) $m\angle EDP =$ _____
 - c) $m\angle CDP =$ _____
 - d) $m\angle PIJ =$ _____
 - e) $m\angle PIH =$ _____
 - f) $m\angle PHI =$ _____
 - g) $m\angle HPI =$ _____
 - h) $m\angle DPE =$ _____
 - i) $m\angle PEF =$ _____

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

9. $\angle ADC$ and $\angle JIL$ are _____ angles.
10. $\angle DEP$ and $\angle PHI$ are _____ angles.
11. $\angle GHK$ and $\angle KHI$ are _____ angles.
12. $\angle HPI$ and $\angle DPE$ are _____ angles.

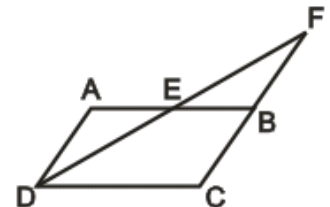
Given $\triangle ABC$ below where $m\angle BCA = 31^\circ$ and $m\angle ABC = 89^\circ$, answer problems 13 – 15.

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



16. Given the figure to the right where $m\angle AED = m\angle ADE = 2x$ and $m\angle DEB = 8x$, find the following.

- a) $x =$ _____
- b) $m\angle AED =$ _____
- c) $m\angle ADE =$ _____
- d) $m\angle DEB =$ _____
- e) $m\angle BAD =$ _____
- f) $m\angle BED =$ _____
- g) $m\angle FEB =$ _____



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

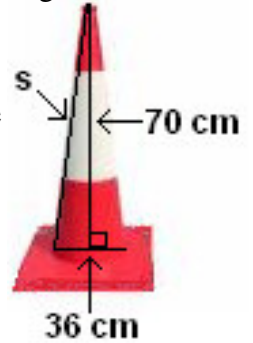
17. 2, 5, 8 _____
18. 1.8, 3.2, 4.9 _____
19. 5, 5, 12 _____

20. The measure of $\angle A$ is $(2x - 9)^\circ$ and the measure of $\angle B$ is $(6x + 3)^\circ$. If angles A and B are complementary angles, find the following:

- a) $x =$ _____ b) $m\angle A =$ _____ c) $m\angle B =$ _____

21. A traffic cone (disregarding the square base) has a diameter of 36 cm and a perpendicular height of 70 cm. Since traffic cones are right circular cones, the perpendicular height bisects the diameter.

- a) Find the slant height “s”. b) If a reflective sleeve is placed over the entire surface of the cone, how many cm^2 of reflective material will be needed to cover the cone?



- c) If the square base of the cone is 3 cm wider than the circle all of the way around, how many cm^2 of plastic will be needed to make the base?

22. A trailer on a truck is converted into a large fish tank. The trailer is in the shape of a rectangular solid. The dimensions of the trailer are 53 feet long by 102 inches wide by 110 inches tall.

- a) What is the length of the trailer in inches?



- b) If the bottom 8 inches of the trailer is filled with sand, what is the volume of the sand placed in the tank?

- c) If the rest of the tank is filled up with water, how much water goes in the tank?

- d) If there are 231 inches³ in one gallon, how many gallons of water are in the tank?

23. Determine which theorem – if any – proves congruence for the given triangles: SSS, SAS, ASA, AAS, HL, or none.

- a) Show $\triangle ABD \cong \triangle CBE$
if $\overline{AB} \cong \overline{CB}$.

