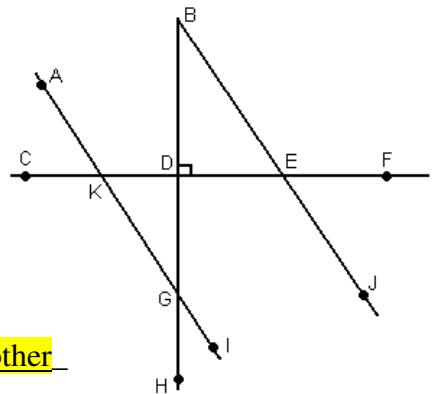


Simplify all answers and show your work!

- The Hypotenuse-Leg Congruence theorem only works on what kind of triangles? Right
- The sum of two supplementary angles is 180° degrees.
- The sum of two complementary angles is 90° degrees.
- Congruent triangles are the same size and have the same shape.
- For corresponding angles or alternate interior/exterior angles to be congruent, a transversal must cross what kind of lines? parallel
- What is the complement of a 26° angle? 64°
- What is the supplement of a 26° angle? 154°

Use the figure to the right to answer problems 8 – 14. Assume that $\overline{AI} \parallel \overline{BJ}$ and $m\angle BDE = 90^\circ$.

- List three right angles. $\angle BDE, \angle BDC, \angle CDH, \angle FDH$; answer varies
- If $m\angle IGH = 29^\circ$, find the measures of:
 - $m\angle KGD = \underline{29^\circ}$
 - $m\angle EBD = \underline{29^\circ}$
 - $m\angle BED = \underline{61^\circ}$
 - $m\angle DKG = \underline{61^\circ}$
 - $m\angle AKC = \underline{61^\circ}$
 - $m\angle AKD = \underline{119^\circ}$
- List a pair of vertical angles. answer varies; angles that "back up" to each other

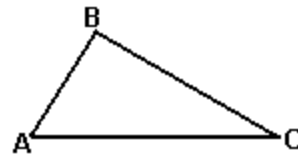


Fill in the blanks with corresponding, vertical, alternate exterior, alternate interior, complementary, or supplementary.

- $\angle AKC$ and $\angle BED$ are corresponding angles.
- $\angle AKC$ and $\angle FEJ$ are alternate exterior angles.
- $\angle CKG$ and $\angle DKG$ are supplementary angles.
- $\angle EBD$ and $\angle BED$ are complementary angles.

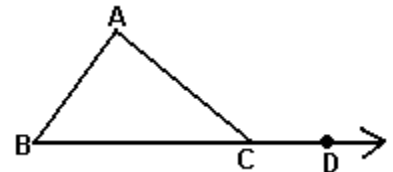
Given $\triangle ABC$ below where $m\angle ABC = 87^\circ$ and $m\angle BCA = 31^\circ$, answer problems 15 – 17.

- Find $m\angle BAC = \underline{62^\circ}$.
- Which side is the longest? \overline{AC}
- Which side is the shortest? \overline{AB}



Given the figure to the right where $m\angle ABC = 2x + 5^\circ$, $m\angle ACB = 3x - 9^\circ$, $m\angle ACD = 4x + 14$ and answer problems 18 – 22.

- Find the value of x . 25
- Find $m\angle ACB$. 66°
- Find $m\angle BAC$. 59°
- Find $m\angle ACD$. 114°
- Find $m\angle ABC$. 55°



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

23. 3, 5, 7 Yes 24. 11, 6, 4 No 25. 0.2, 0.1, 0.06 No

26 Given a can having a radius of 4 cm and a height of 25 cm

- a) Find the volume of the can. b) Find the surface area of the can, including the top and bottom.

$\approx 1256.6 \text{ cm}^3$

$\approx 728.85 \text{ cm}^2$

or

or

$= 400\pi \text{ cm}^3$

$= 232\pi \text{ cm}^2$

27. Our sun has a radius of approximately 695,500 kilometers and the Earth has a radius of approximately 6378.1 kilometers. Both are spherical in shape.

- a. Find the approximate volume of the sun. b. Find the approximate volume of the Earth.

$\approx 1.409 \times 10^{18} \text{ km}^3$

$\approx 1.087 \times 10^{12} \text{ km}^3$

c. How many times larger is the volume of the sun with respect to the volume of the Earth?

Answers will vary depend on rounding. $\approx 1,296,634$ times (exact)

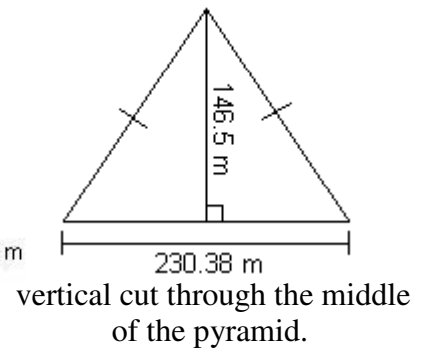
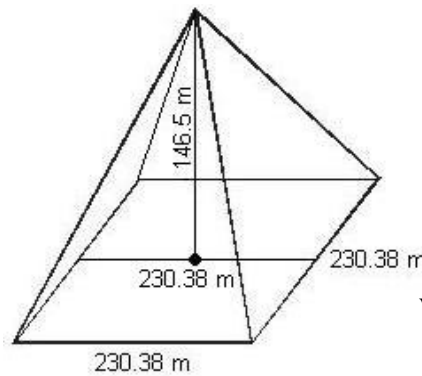
28. The Great Pyramid is a right pyramid having a square base of length 230.38 meters and a perpendicular height (not the slant height) of 146.5 meters. Each of the triangular faces is an isosceles triangle.

- a. Find the slant height of the pyramid.

$\approx 186.36 \text{ m}$

- b. Find the area of each of the triangular faces.

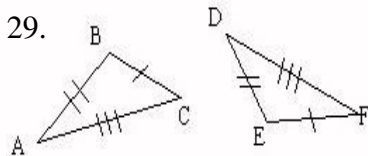
$21,466.81 \text{ m}^2$



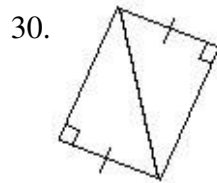
- c. Find the surface area of the pyramid. Include the bottom.

$138,942.178 \text{ m}^2$

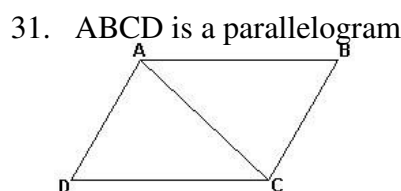
For each pair of triangles, determine which theorem – if any – proves congruence: SSS, SAS, ASA, AAS, HL, or none.



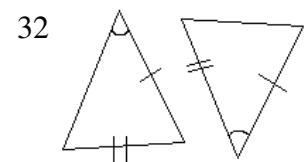
SSS



HL



Any of SSS, SAS, ASA, or AAS



None