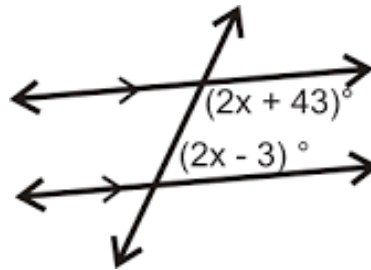
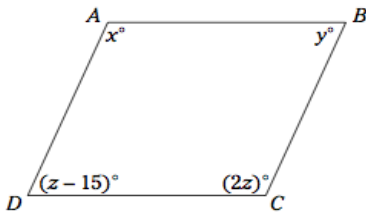


Homework Week #3 (Unit Test #1 Study Guide)

Due: September 19, 2016

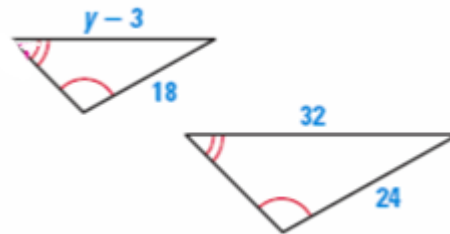
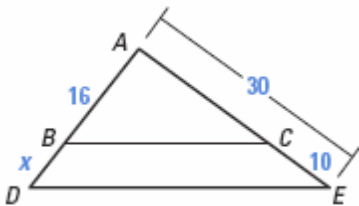
Parallel Lines & Transversals, Parallelograms

- Use slope to determine whether the given vertices form a parallelogram. F(-1, 1), G(-1, 3), H(4, -2), I(2, -4)
- Use the distance formula to determine whether the vertices form a parallelogram: M(0, 8), N(-1, 2), O(5, 6), P(6, 12)
- ABCD is a parallelogram. Solve for x, y, and z.
- Solve for x.



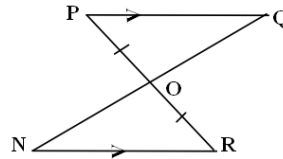
Similarity with Triangles

- A building has a shadow that is 25 feet long. A person 6 feet tall cast a similar shadow. How long is the person's shadow?
- Two triangles are similar. The sides of the first triangle are 7, 9, and 11. The smallest side of the second triangle is 21. Find the perimeter of the second triangle.
- Find the length of BD.
- The triangles are similar. Find the value of the variable.

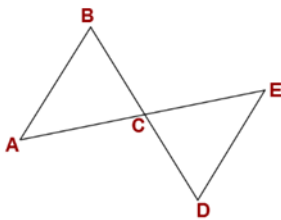


Triangle Congruence

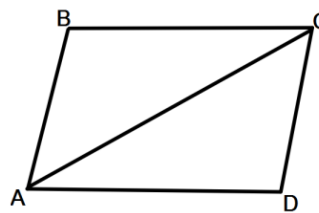
- Given $\triangle ABC$ and $\triangle EDC$, with $\overline{AB} \cong \overline{EC}$, $\overline{BC} \cong \overline{ED}$ and $\overline{AC} \cong \overline{DC}$. State why $\triangle ABC \cong \triangle CED$. (Give the postulate)
- State why $\triangle PQO \cong \triangle RNO$. (There may be more than one postulate.)



- In the diagram below, $\overline{BC} \cong \overline{CD}$. What piece of information is necessary for $\triangle ABC \cong \triangle EDC$ by SAS?

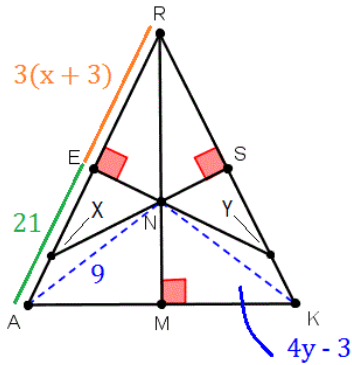


- In the diagram below, $\overline{BA} \cong \overline{CD}$ and $\overline{BA} \parallel \overline{CD}$. How can you prove that $\overline{BC} \cong \overline{AD}$?

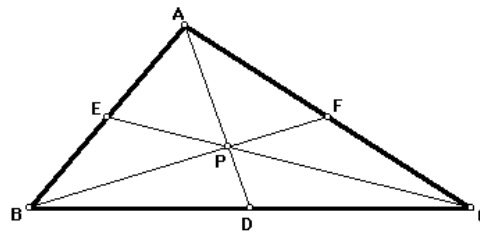


Centers of Triangles

13. N is a circumcenter. Solve for x and y.



14. P is a centroid.



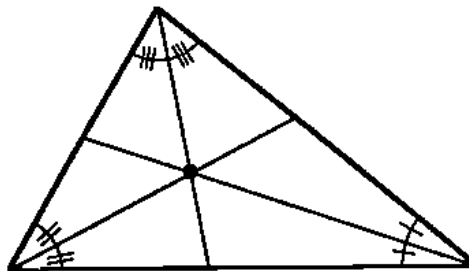
If $PF = 3$, what is the length of \overline{PB} ?

If $BE = 12$, what is the length of \overline{AB} ?

If $AD = 18$, what is the value of \overline{PD} ?

15. Ms. Wilson has a triangular shaped backyard. She wants to put in the largest possible circular pool in her backyard. What point of concurrency would you use to determine the location of the pool's center?

16. State the point of concurrency that is shown below.



Volume

17. A small city wants to build a cylindrical water tank that holds 50,000 liters. The city wants the height of the tank to be 12 meters. What will be the tank's diameter?

(1 cubic meter = 1000 liters)

18. A cone has a height of 12 inches and a circumference of 18 inches. What is the volume of this cone?

19. A square pyramid has a volume of 600 cubic meters and a height of 12 meters. What are the side lengths of the base of the pyramid?

20. Joshua has two round basketballs. One basketball has a radius that is 2 times the other basketball. How much more air will the larger basketball need than the smaller basketball?

Mixed Review

21. Given a cylinder with a height of 70 mm and a radius of 18 mm, find the area of a cross section perpendicular to the base.

22. A student finds a rock on the way to school. In the laboratory he determines that the mass of the rock is 24.56 g and the density of the rock is 1.89 g/cm³, what is the volume of the rock?

23. A carver begins working on a block of granite with a length of 15 cm, width of 12 cm, and height of 8 cm that weighs 1200 g. What is the density of the granite?

24. Draw and label the dimensions of the figure generated by the rotation of the triangle (to the right) about the dotted line. Find the volume of the figure.

