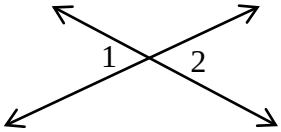
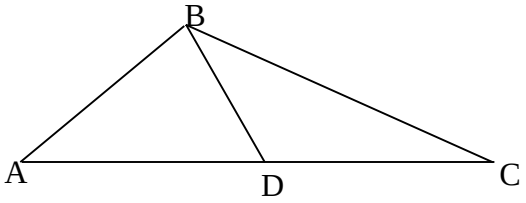
Math 1312
Final Test Review

Final Exam covers chapters 1- 6, 8 (only sections covered in class) from the textbook.
How to study: Study the class notes, review homework problems, and try to do as many exercises as you can from the textbook. Note that answers are provided at the back of the book to all odd numbered problems.
You need to know what definitions mean and theorems and postulates as facts but you do not need to memorize them word by word.
Here I provide some examples for you. This is not a complete list, studying only these examples is not enough!

1. Find x if $m\angle 1 = 9x - 4$ and $m\angle 2 = 3x + 14$



2. Find AB if $\overline{BD}$ is a median of ΔABC and $AB = 2x$, $AD = x - 1$ and $DC = 4x - 16$.



3. Determine the type of triangle if the lengths of the sides are as follows
a) 5, 7, and 4

b) 6, 7, and 8

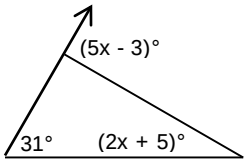
c) 9, 12, and 15

d) 4, 9, and 3

4. In ΔABC $m\angle A = 21^\circ$, $m\angle B = 4x + 19^\circ$, and $m\angle C = 6x^\circ$. Find $m\angle C$.

5. In an isosceles trapezoid the bases are 70cm and 30cm. Find the length of the median.

6. Find x.



7. Find the side of a rhombus with diagonals 12 and 14.

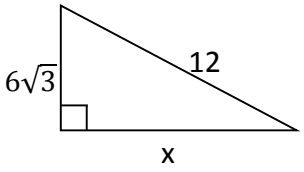
8. What is the measure of each interior angle of a regular hexagon?

9. The measure of each exterior angle of a regular polygon is 40°. How many sides does it have?

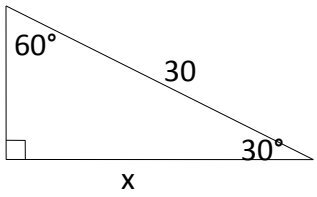
10. Suppose that the perimeter of a quadrilateral is 70 and the lengths of the sides are in ratio $2:3:4:5$. Find the measure of each side.

11. ΔDEF is isosceles . $\angle D$ is the vertex angle, $m\angle E = 2x + 40$, and $m\angle F = 3x + 22$. Find the measure of each angle.

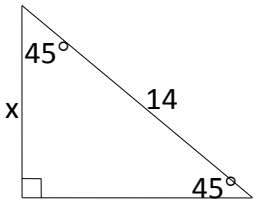
12. Find x.



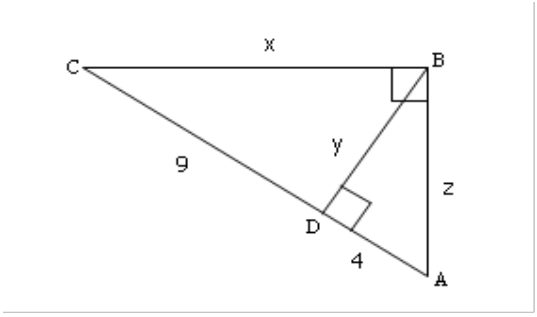
13. Find the exact value of x.



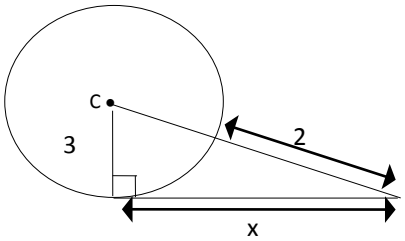
14. Find the exact value of x.



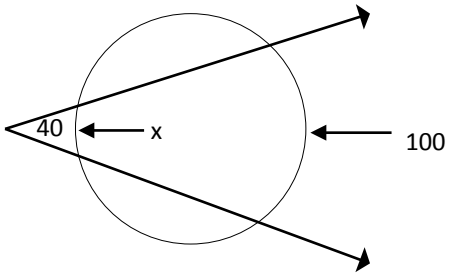
15. Find x, y, and z.



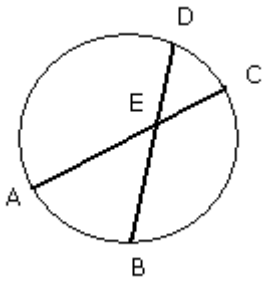
16. Find the value of x in the circle below.



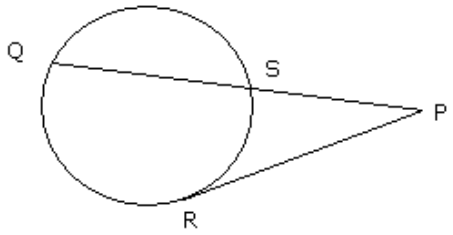
17. Find the value of x in the circle below.



18. Find AC given $DE = 5$, $BE = 16$, and $AE = 10$.

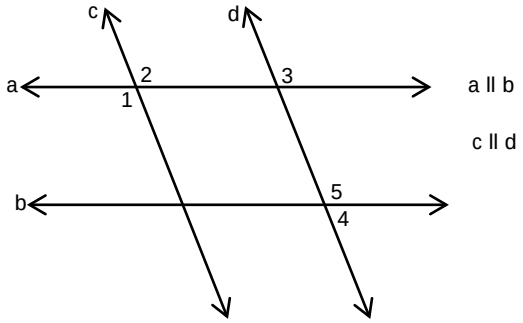


19. Given $PR = 8$, $PS = 4$, find PQ.



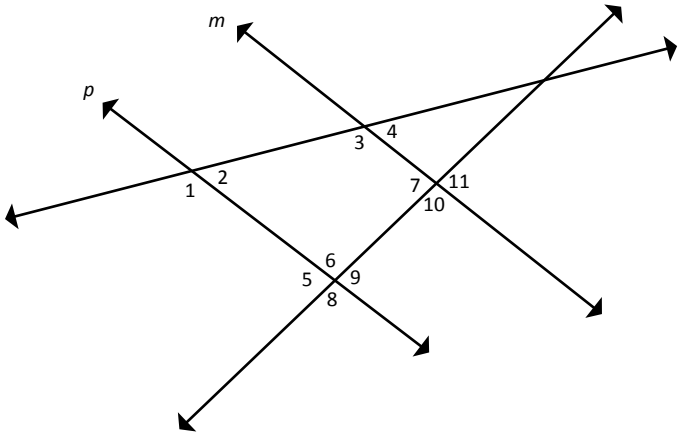
20. Given $\Delta RTS \sim \Delta UWV$ (not shown). Find WV if $RT = 4$, $UW = 6$, and $TS = 8$.

21. Find $m\angle 4$ and $m\angle 5$, if $m\angle 2 = 127^{\circ}$.



22. Name the additional pair of parts that must be congruent for us to use the $SSS \cong$ method. In a parallelogram $MNOP$ with diagonal MO, $\Delta MNO \cong \Delta OPM$.

23. In the figure below, $p \parallel m$, $m\angle 2 = 64^{\circ}$ and $m\angle 7 = 112^{\circ}$. Find the following angle measures $m\angle 1$, $m\angle 3$, $m\angle 9$, and $m\angle 10$.



24. State whether the following statements are Always true, Sometimes true, or Never true.

A. If $AM = MB$, then $A, M,$ and B are collinear.

B. If two angles are congruent, then they are right angles.

C. The supplement of an obtuse angle is another obtuse angle.

25. Two angles are supplementary. One angle is 40° more than four times the other. Find the measures of the two angles.

26. To prove a theorem of the form "$If\ P, then\ Q$" by the indirect method, the first line of the proof should read:
Suppose that _____ is true.

27. In triangle ABC, $m\angle C = 46^{\circ}$, and $m\angle B = 93^{\circ}$. Name the shortest side of the triangle.

28. In ΔABC, M is the midpoint of $\overline{AB}$ and N is the midpoint of $\overline{AC}$. If $MN = 3x - 11$ and $BC = 4x + 24$, find the value of x.

29. Find the exact circumference of a circle whose area is 6.25π

30. Assuming that a 90° arc has an exact length of 4π, find the length of the radius of the circle.

Formulas to be provide on the Final Exam.

They will be a link!

$$C = \pi d$$
$$\ell = \frac{m}{360} \cdot C$$