Math 5e, Homework 26

due April 30

Instructions: Some of the problems we solved in class, and some are new. Please try to solve all problems, do your best, and show your work. Write on separate sheets of paper, not between the lines of this handout!

Geometry: Congruency

Congruent triangles

Rule 1 (Side-Side-Side rule). If $AB = A'B'$, $BC = B'C'$ and $AC = A'C'$ then $\Delta ABC \cong \Delta A'B'C'$.

Rule 2 (Side-Angle-Side rule). If $AB \cong A'B'$, $AC \cong A'C'$ and *the angles these sides* $\angle CAB = \angle C'A'B'$, then $\Delta ABC \cong \Delta A'B'C'$.

Parallelogram: A parallelogram is a quadrilateral in which opposite sides are parallel.

The sum of angles of an n-gon: is (n - 2) × 180.

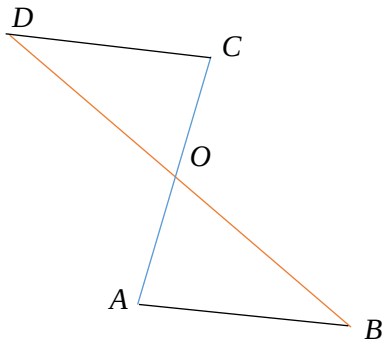
Homework

(some problems were solved in class; review notes and please solve again)

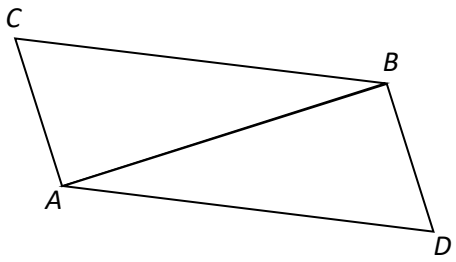
1. Solve the equations
   a. $\frac{2}{3}x - \frac{1}{6}x = 54$
   b. $\left(2x + \frac{3}{4}x\right) - \frac{1}{2}x = \frac{15}{18}$

2. Write as powers with the same base
   Example: $2 \times 2 \times 2 \times 2 = 2^4$
   a. $5^2 \times 5^3 =$
   b. $2^4 \times 64 =$
   c. $23^6 \div 23^7 =$
   d. $\frac{7^9 \cdot 7^5}{7^{12}} =$

3. The segments AC and BD intersect at point O that splits each in two equal parts (point O is a segment bisector). Show (prove) that $\measuredangle AOB \cong \measuredangle COD$



4. In the figure, $AC \perp AB$ ($\perp = perpendicular$), $BD \perp AB$ and $AC = BD$. Show (prove) that $\measuredangle ABC \cong \measuredangle BAD$



5. In the isosceles triangle ABC with sides AC and BC, CD is an angle bisector (splits the angle C in two equal parts). Show (prove) that $\measuredangle ACD \cong \measuredangle BCD$