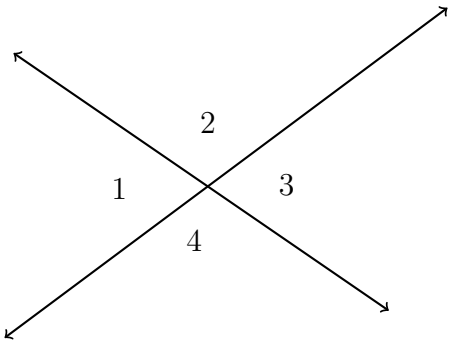
3.1 Homework: Volume and vertical angles

1. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$.

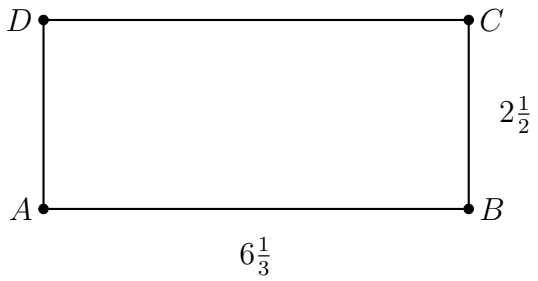


   (a) Given that $m\angle 1 = 75°$, find $m\angle 2 =$ _____

   (b) Find $m\angle 3 =$ _____

   (c) True or false, $\angle 1$ and $\angle 4$ are supplementary angles. _____

2. Given the rectangle $ABCD$ shown below, with $AB = 6\frac{1}{3}$ and $BC = 2\frac{1}{2}$. Find the area of the rectangle, expressing your result as a fraction.



3. Find the volume of a box (rectanglar prism) having a length of 12 inches, a width of 6 inches, and a height of 5 inches. Show the calculation.

4. The Washington Monument has a square base 55 feet long on each side. It is roughly 555 feet tall. Estimate its volume using the formula for a prism. (in fact, the sides angle in slightly and the monument is narrower at the top)

5. Measure the required angles of the diagram below and answer the questions.

   (a) $m\angle AOB =$ _____ $m\angle BOC =$ _____ $m\angle DOE =$ _____

   (b) Name the angle that is opposite to $\angle AOB$: _____

   (c) Name an angle that is supplementary to $\angle COB$: _____

   (d) Name an angle that is complementary to $\angle DOE$: _____