$$\textbf{Practice 2.1 } (\text{November 8})^1$$

You have to fill this poll https://goo.gl/forms/taeaUUBDWUVVTVIi1 before Monday 7, 10 pm.

1. Compute the following expressions, giving your answer as an irreducible fraction.

   a) $\left(\dfrac{1}{6} + \dfrac{5}{4} - \dfrac{1}{3}\right) \div \left(\dfrac{1}{3} \times \dfrac{3}{4} + \dfrac{8}{3}\right)$ b) $\dfrac{2}{3} \div \dfrac{5}{9} + 5 \times \dfrac{2}{9} - 2 \times \left(\dfrac{5}{9} - \dfrac{1}{3}\right)$

2. Represent in the number line the fractions 2/3, 1/4 and their addition. Use the figure, paying special attention to choose the proper unit.
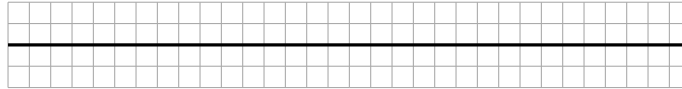

3. Which fraction is bigger, 8/9 or 7/8? Look for a strategy than can be generalized to items b) and c), avoiding unnecessary calculations.

   b) $\dfrac{6789}{6790}$ and $\dfrac{34567}{34568}$ c) $\dfrac{1129}{2260}$ and $\dfrac{5499}{11000}$

4. Find the smallest fraction that is bigger than 1 and that has a denominator with two digits. (november 2015)

5. In 1 hour, a gasoil truck has fill up 5/12 of a deposit. If it goes on at the same speed, how long will it take it to fill the full deposit? Look for a solution that makes sense using the contents that we have seen so far. In particular, avoid the "regla de tres" strategy.

6. In each case we have some information about thee rational numbers A and B. What can you say in each case about the numbers $A \times B$, A/B and B/A?

   a) $0 < A < B < 1$.   b) $0 < A < 1 < B$.   c) $1 < A < B$.

7. The rectangle in the picture has been divided into two parts. The first one has 1/3 of the total area and has been divided into equal parts. What fracion of the right rectangle we have to shade in order to have 1/5 of the total area shaded?
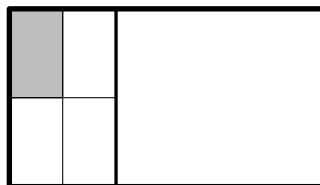
8. A group of friends bought 12 pizzas and they shared them equally. If each friend ate 3/5 of a pizza, how many friends were there in the group?   (november 2013)

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[1]The symbol © means that a problem can be solved with the help of a calculator.

9. In a glass with cylindrical shape we have water and oil. Remember, water and oil do not mix, and the oil remains on top of the water. We place a stick, perpendicular to the bottom of the glass. We know that 1/4 of the stick is inside the liquid, and that 2/3 of the liquid is water. If the measure of the part of the stick inside the oil is 4 cm, what is the total lenght of the stick? (june 2016)

10. We make a "sangría" with the following recipe: 2 measures of juice, 1 measure of gin (gin has 2/5 of alcohol) and 5 measures of wine (wine has 1/8 of alcohol). What will be the fraction of alcohol in the resulting drink? Give your answer as an irreducible fraction.

11. A farm is divided between three brothers. The first one owns one third of the total surface and uses his land for hunting. The second one owns 2/5 of the remaining part, half of his land is devoted to cereal crop and in the other half there are pine trees. The third brother owns 72 hectares and 2/9 of them are devoted to ceral crop.

   a) What is the total surface of the farm?

   b) What fraction of the farm is devoted to cereal crop?

12. Bonus: http://blog.mrmeyer.com/2011/wcydwt-coke-v-sprite/