Get It Solved 2019 Contest. Mathematics. Demo Version

1. Some milk and coffee were mixed together in a big glass, the volume of coffee being equal to 84% of the total volume. After that some more coffee was added to the glass so that the volume of coffee became equal to 96% of the total volume. How much times is the new volume of new liquid greater than the initial one?

2. All the students in a class are child prodigies. Each of the girls got 4 diplomas on school olympiads, 4 diplomas on city olympiads and 2 diplomas on regional olympiads, and each of the boys got 10 diplomas on school olympiads, 8 diplomas on city olympiads and 3 diplomas on regional olympiads. It is known that the amount of diplomas on city olympiads exceeds that on regional olympiads by 62. How many school olympiad diplomas did they get in the class?

3. Legs AC and BC of a right triangle ABC are equal to 1 and 7 respectively. Angle bisector CL and altitude CH are drawn from the vertex of the right angle. Find the ratio of $CH : CL$. (Express the answer as a decimal fraction rounded up to one digit after the decimal point.)

4. A pedestrian and a cyclist start moving from point A to point B along a straight road. Each of them has a constant speed. As soon as the cyclist reaches B, he immediately turns around and goes back to A, turns around and goes back to B, and so on. While the pedestrian walks to B, he meets the cyclist several times. It is known that their first encounter has happened 15 minutes after they have started. How much time has passed before they meet for the fifth time (counting from the moment they started their motion)? Express the answer in minutes.

5. A square with its side equal to 1 meter has been cut into several parts, the cuts being parallel to the sides of the square and going from one side of the square to another one. The total number of rectangles obtained this way is equal to 216. Find the smallest possible total length of all the cuts. Express the answer in meters.