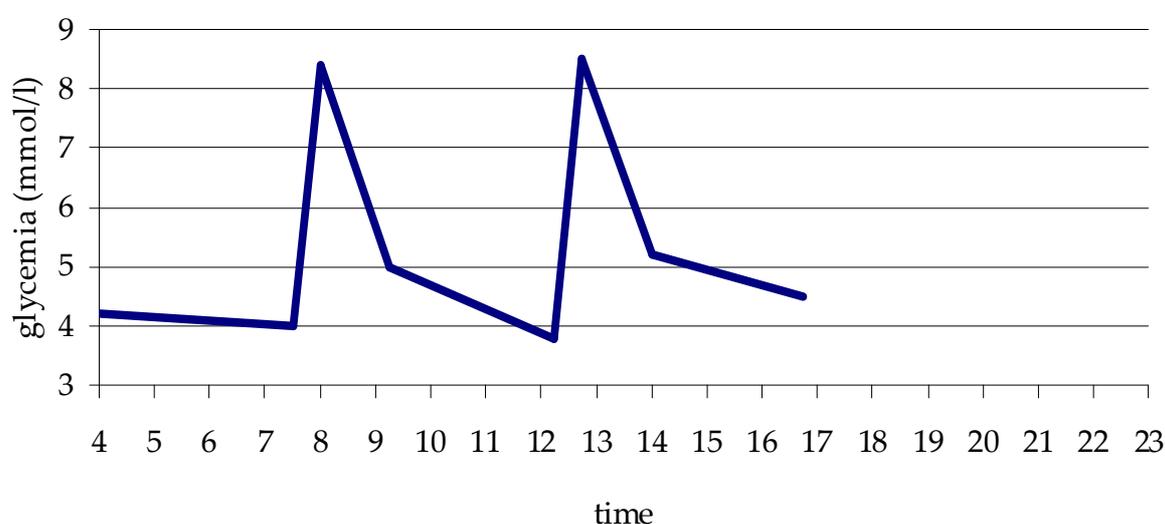


GLYCEMIA

Feeling of hunger is influenced by a blood glucose level. Glucose is created in stomach from the sugar we get in food. After a meal its level rises in our blood. It reaches its highest level half an hour after finishing a meal and then it slowly goes down. When it falls under certain level our brain center gets the signal which we feel as hunger.

Glycemia is the blood glucose level. It is given in the units mmol/l (milimol per liter) which represent the number of glucose molecules in one liter of blood.

This graph is depicting the patient's blood glucose level during the day (from 4 am. to 5pm.)



Excercise 1: What is the highest value glycemia reached in this graph?

Answer: mmol/l.

Excercise 2: When did the patient have his breakfast and lunch? Give reasons for your answer.

Answer: The patient had his breakfast approximately at and his lunch approximately at

Explanation of the reasons:

Excercise 3: Patient had his dinner at 19.00. According to this information finish drawing of this graph in the time interval from 17.00 to 23.00.

Glycemia and illnesses. Healthy man's fasting blood glucose level is moving between 3.5 – 6.0 mmol/l. Two hours after the meal its level is less than 7.8 mmol/l. Glycemia usually doesn't rise above this level not even immediately after the meal.

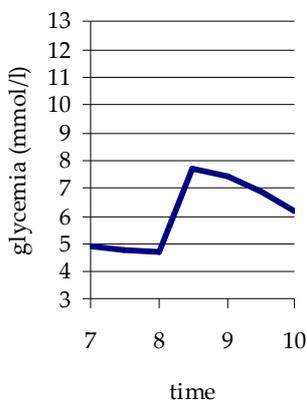
If fasting glucose level or two hours after the meal glucose level is higher we talk about the impaired fasting glucose, impaired glucose tolerance or diabetes. In the table there are the WHO's (World Health Organization) criteria for these impairments.

	Impaired fasting glucose		Impaired glucose tolerance		diabetes	
	fasting	after 2 hours	fasting	after 2 hours	fasting	after 2 hours
glycemia (mmol/l)	≥ 6.1 and at the same time < 7.0	< 7.8	< 7.0	≥ 7.8	≥ 7.0	≥ 11.1

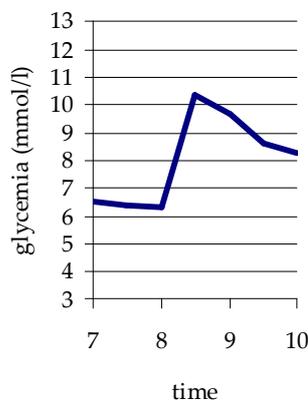
Excercise 4: Mr. Novak had his breakfast at 8.00. His physician found out that the graph of his glycemia between 7.00 and 10.00 fulfilled all criteria of the impaired glucose tolerance.

Which of the following graphs from a) to e) could be the graphs of Mr. Novak's glycemia from 7.00 to 10.00? Circle the correct answers.

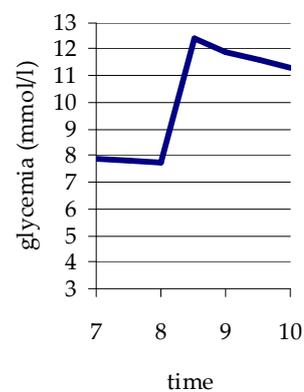
a)



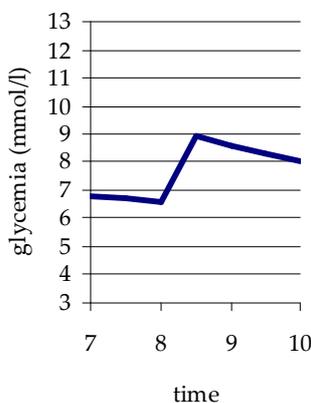
b)



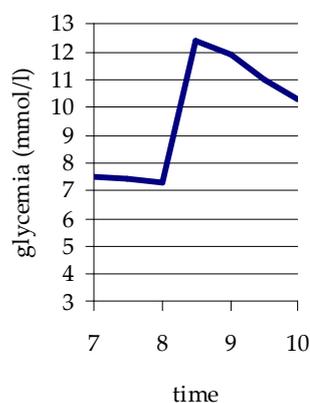
c)



d)



e)





Excercise 5: Mrs. Kovacova had her breakfast at 8.00. Her physician found out that the graph of her glycemia between 7.00 and 10.00 fulfilled all criteria of an impaired fasting glucose. Draw a graph which could be the Mrs. Kovacova's glycemia graph in the time interval from 7.00 to 10.00.

