Pregnancy – IB style questions

Magali, in the photo above, has just received an email from the blood testing lab showing the results of a recent blood test. She is keen to understand the results so she can tell her partner the exciting news. Use this diagram to help you answer questions 1 & 2.

1. Which of the phrases below best describes hCG?

   A. It is a hormone made in the hypothalamus which controls blood cholesterol
   B. It is a hormone made by an implanted embryo which affects the ovaries
   C. It is a hormone made in the ovaries which helps a newly implanted embryo
   D. It is a hormone made by the uterus lining which blocks the release of estrogen

2. How many weeks after the last menstrual period ("weeks after LMP") is Magali likely to be?

   A. 4 weeks
   B. 5-6 weeks
   C. 7-8 weeks
   D. Impossible to say

3. Why is it not possible to give an exact answer to question two?

   A. The lab test is not very accurate.
   B. Magali may not be pregnant
   C. The levels of hCG are very variable in different pregnancies
   D. hCG is not the only hormone in Magali's blood.

Magali searches on the internet to find out more about the test results. She finds some data on a website http://www.betabase.info/ Questions 4 to 5 refer to this data for hCG levels in pregnancies with a single embryo for mothers aged between 18-30.

HGC level
Scores for Successful* Single Pregnancies
Women Aged 18 To 30

Days Past Ovulation	Median HCG Level	Lowest HCG Level Reported	Highest HCG Level Reported	Number of women reporting a number for this day
20	1194	77	9279	456
21	1659	89	13576	404
22	2407	163	19861	340
23	3354	207	22701	287
24	4350	233	25947	240
25	5391	321	29658	179
26	6994	293	33900	151
27	8799	268	42257	123
28	11395	245	53945	100
29	15129	224	62756	87
30	18485	205	73007	73

* Pregnancies are deemed successful if a heartbeat is detected.

Image source: http://www.betabase.info

4. Magali's HCG level was reported as 10000 IU per litre. What is the most likely age since ovulation of Magali's embryo baby?

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5. Which of the days shown on the table could match Magali's reading of 10000 UI/L

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6. Why is there a difference of about two weeks between the lab results and the data in the table?

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7. Explain the role of hCG during the early stages of a pregnancy.

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8. Suggest how the level of hCG would be different in the early stages of a twin pregnancy. (i.e. with 2 embryos)

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