JF Mathematics(CS1003) Michaelmas (First)Term 16-17

JF Maths CS1003

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Timetable

TimetableMichaelmas Term: 26-Sept-2016 to 16-Dec-2016

Monday	Tuesday
CS1003 Lecture	
(Goldsmith Hall)	
But (On 17 & 24 Oct in LB 04)	
CS1003 Tutorial	
(Goldsmith)	
CS1003 Tutorial	CS1003 Lecture
(LB 08)	(MacNeil)
CS1003 Tutorial	CS1003 Lecture
(LB 04)	(MacNeil)
	CS1003 Lecture (Goldsmith Hall) But (On 17 & 24 Oct in LB 04) CS1003 Tutorial (Goldsmith) CS1003 Tutorial (LB 08) CS1003 Tutorial

Bank Holiday Monday: 31th October.

Reading Week: 7-Nov to 11-Nov.



Awesome Mind Reader

Awesome Mind Reader Solution:

Let n be the 2-digit where $10 \le n \le 99$ and let a and b be the digits of n, \therefore (therefore)

n = 10 * a + b — we use * for multiplication.

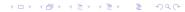
with $1 \le a \le 9$ and $0 \le b \le 9$.

Calculating

$$egin{aligned} ig(10*a+big) - ig(a+big) \ &= 9*a & ext{where } a \in \{1..10\} \ ext{tf.} & ext{answers} &= \{9,18,27,36,45,54,63,72,81\} \end{aligned}$$

All *answers* are given the same symbol, which may change from game to game.

Note: Some non multiples of 9 are also given this symbol, as a distraction.



Awesome Mind Reader

Awesome Mind Reader Solution:

Let n be the 2-digit where $10 \le n \le 99$ and let a and b be the digits of n, \therefore (therefore) n=10*a+b — we use * for multiplication. with $1 \le a \le 9$ and $0 \le b \le 9$. Calculating, (10*a+b)-(a+b)=9*a where $a \in \{1..10\}$ tf. $answers = \{9,18,27,36,45,54,63,72,81,90\}$.

All *answers* are given the same symbol, which may change from game to game.

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Puzzles

Qs. 1

- If someone says to you,
 "I'll bet you a euro that if you give me five euro I'll give you a 10 euro in exchange."
 Would that be a good bet to take?
- Suppose you and I have the same amount of money. How much must I give you so that you have €10 more than me.
- A bottle of wine costs €10. The wine is worth €9 more than the bottle. How much is the bottle worth.

Cont'd

Qs. 2

In a certain sports pub each fan was either a Spurs fan or an Arsenal fan.

At one stage one of the Spurs fans decides to become an Arsenal fan and as a consequence there was the same number of Arsenal fans as Spurs fans.

A bit later this new Arsenal fan changes their mind and reverts to being a Spurs fan. Later on, an Arsenal fan decides to become a Spurs fan, at which point there were twice as many Spurs fans as Arsenal fans.

How many fans were there in the sports pub?

Solution Qs. 2

Let S be the number of Spurs fans.

Let A be the number of Arsenal fans.

From

"At one stage one of the Spurs fans decides to become an Arsenal fan and as a consequence there was the same number of Arsenal fans as Spurs fans."

we get:

$$S - 1 = A + 1 :: S - A = 2$$

Solution Qs. 2 (Cont'd)

From

"A bit later this new Arsenal fan changes their mind and reverts to being a Spurs fan. Later on, an Arsenal fan decides to become a Spurs fan, at which point there were twice as many Spurs fans as Arsenal fans."

$$S + 1 = 2 * (A - 1)$$

 $\therefore S + 1 = 2 * A - 2$
 $\therefore S - 2 * A = -3$

From above: S - A = 2 : we have simultaneous equations:

Cont'd

$$S - 2*A = -3$$

 $S - A = 2$

Multiply line 2 by -1:

$$S - 2*A = -3 \\ -S + A = -2$$

Add line1 to line2:

$$S - 2*A = -3$$

0 - $A = -5$

∴
$$A = 5$$

Since $S - 2 * A = -3$ i.e. $S - 2 * 5 = -3$
∴ $S = 7$