1

If the number of sticks on a table is a multiple of 6, then the second player will win in any case (well if the player is smart enough).

Consider n=6, no matter how many sticks will be removed by the first player (1, 2, 3 ,4 or 5), the rest (5, 4, 3, 2, or 1) can be removed by the second one.

The same for n=12: no matter how many sticks will be removed by the first player 1, 2, 3 ,4 or 5, the second one can remove 5, 4, 3, 2, or 1 so that to leave 6 sticks on the table and we are back to the case we discussed above.

Answer: D.

2

James worked for 41 hours hence he earned 40*x+1*2x=42x dollars;

We know that Harry also earned the same 42x dollars, out of which he earned 30x dollars for the **first 30 hours** plus 12x additional dollars. Since for each additional hour he gets 1.5x dollars then he worked for 12x/1.5x=**8 additional hours**, so Harry worked for total of 30+8=38 hours.

Answer: D.

3

Equation should be (10+$2*x)(100-5x)=1,360, where x is the # of times we increased the price by $2. (10+$2*x)(100-5x)=1,360 --> (5+x)(20-x)=136 --> x=3 or x=12 --> price=10+$2*3=$16 or price=10+$2*12=$34.

Answer: C.

But the easiest way to solve this problem would be to write down a chart:
$10*100=$1,000;
$12*95=$1,140;
$14*90=$1,260;
$16*85=$1,360.

Or do the other way around and plug the answer choices.

Answer: C.

4

A certain telephone company offers two plans, A and B. Under plan A, the company charges a total of $0.60 for the first 7 minutes of each call and $0.06 per minute thereafter. Under plan B, the company charges $0.08 per minute of each call. What is the duration of a call, in minutes, for which the company charges the same amount under plan A and under plan B?

A. 2
B. 9
C. 15
D. 21
E. 30

Let the duration, in minutes, for which the company charges the same under plan A and plan B be t minutes.

Then under plan A the cost would be $0.6+0.06(t-7) and under plan B the cost would be $0.08t. We want these amount to be equal: 0.6+0.06(t-7)=0.08t --> 60+6(t-7)=8t --> t=9.

Answer: B.

5

Let the # of 5¢ envelopes be 2, then # of 2¢ envelopes will be 5, total=2+5=7 envelopes: x+1=7 --> x=6.
Cost: 5¢*2+2¢*5=20¢.

Now, plug x=6 in answer choices and see which one gives 20¢:

B. (7x - 2)/2=(7*6-2)/2=20¢. Correct.

Answer: B.

Note that for plug-in method it might happen that for some particular numbers more than one option may give "correct" answer. In this case just pick some other numbers and check again these "correct" options only. For example numbers 1 and 4 gives two "correct" choices A and B.