Homework 1

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Emma has just started the fall semester and her first homework is to build a calculator designed for certain operations. To improve efficiency, she uses assembly language. Since she is new to this language, she needs your help with coding.

Your task is to read two numbers from the standard input, apply certain operations on them and print the final result. The formula of the operation is unique to each student. You can find your formula at the end of this document.

Your code **<u>must</u>** comply with the following rules:
  - You can only use the EAX, EBX, ECX, EDX, ESI, and EDI registers.
  - You are not allowed to use the memory/Data segment.
  - You must use the read_int and print_int functions (from the textbook) for I/O.
  - You can only use the commands you have learned so far in the class.
  - You cannot use MUL, IMUL, jumps, etc.

Please notice that your code will be checked for similarity. In the case of cheating the student will receive a negative point. It is your responsibility to protect your code.
Please upload only the " **.asm** " file on courses.kntu.ac.ir.

Example:

If input numbers are 2 and 5 and your formula is ((first number + 28) * 7) - (second number - 79) * 2 then the output number will be:

358 = ((2+ 28) * 7) - (5 - 79) * 2

Hint: Try to break each multiplier into powers of 2. For example
x*11 = x*8 + x*2 + x*1

Formulas:

ID	Equation	a	b	Result
9422283	(((b * 4) * 3) + (a +28)) * 5	3	4	395
9423123	(((a + 14) * 5) - (b - 46)) * 6 - b	3	4	758
9427833	((b - 85) + ((a + 103) * 7)) * 8 - a	3	4	5285
9428003	(((a + 51) * 5) - (b - 95)) * 9 - b	3	4	3245
9428073	((b - 95) + ((a + 73) * 4)) * 4 - a	3	4	849
9428183	((b - 76) + ((a + 91) * 6)) * 4 - a	3	4	1965
9525883	((a + 33) - ((b * 7) + 58)) * 8 + b	3	4	-396
9526173	((a + 20) - ((b * 5) + 108)) * 7 + b	3	4	-731
9526923	(((a + 103) * 9) - (b - 106)) * 5 - b	3	4	5276
9527393	(((b * 9) * 3) + (a +48)) * 8	3	4	1272
9624443	((b - 32) + ((a + 96) * 8)) * 8 - a	3	4	6109
9625113	((a + 17) - ((b * 5) + 30)) * 7 + b	3	4	-206
9625523	(((a * 5) + 77) + (b - 70)) * 4 + a	3	4	107
9626723	(((b * 5) * 3) + (a +22)) * 6	3	4	510
9626933	6 * ((2+a)+(6 * b))-(a - b + 63)	3	4	112
9627133	(((a * 4) - 79) - (b + 65)) * 5 - b	3	4	-684
9629273	(((a * 7) + 43) + (b - 92)) * 5 + a	3	4	-117
9629713	(((a + 88) * 7) - (b - 93)) * 6 - b	3	4	4352
9629853	((b - 106) + ((a + 63) * 7)) * 8 - a	3	4	2877

9630903	4 * ((2 * b)-(4 * a))+(b + a - 20)	3	4	-29
9631343	(((b * 7) * 4) + (a +77)) * 4	3	4	768
9631493	(((b * 5) * 3) + (a +62)) * 4	3	4	500
9632213	(((a + 87) * 7) - (b - 21)) * 4 - b	3	4	2584
9638033	4 * ((2 * b)-(5 * a))+(b + a - 64)	3	4	-85
9701723	(((a * 7) - 104) - (b + 87)) * 4 - b	3	4	-700
9724593	(((b + 106) * 6) + (a - 82)) * 4	3	4	2324
9724743	((b - 87) + ((a + 36) * 7)) * 6 - a	3	4	1137
9724823	(((a * 9) + 107) + (b - 84)) * 5 + a	3	4	273
9724913	((a + 57) - ((b * 9) + 40)) * 9 + b	3	4	-140
9724923	((b - 69) + ((a + 60) * 9)) * 4 - a	3	4	2005
9724993	(((a * 5) + 25) + (b - 34)) * 4 + a	3	4	43
9725073	(((a * 4) - 72) - (b + 10)) * 5 - b	3	4	-374
9725443	6 * ((2 * b)-(5 * a))+(b + a - 70)	3	4	-105
9725483	7 * ((2+a)+(5 * b))-(a - b + 85)	3	4	91
9725543	(((b * 9) * 4) + (a +73)) * 8	3	4	1760
9725743	6 * ((2 * b)-(6 * a))+(b + a - 72)	3	4	-125
9725903	7 * ((2 * b)-(5 * a))+(b + a - 104)	3	4	-146
9725993	(((a * 7) + 51) + (b - 33)) * 4 + a	3	4	175
9726153	((a + 33) - ((b * 8) + 30)) * 7 + b	3	4	-178
9726243	(((a * 9) - 40) - (b + 28)) * 5 - b	3	4	-229
9726473	(((a * 7) + 11) + (b - 56)) * 4 + a	3	4	-77
9726523	(((b * 7) * 3) + (a +101)) * 7	3	4	1316
9726923	((a + 84) - ((b * 9) + 75)) * 9 + b	3	4	-212
9727283	(((b * 4) * 3) + (a +56)) * 6	3	4	642
9727323	(((b + 81) * 6) + (a - 14)) * 4	3	4	1996
9727543	(((a + 102) * 6) - (b - 40)) * 8 - b	3	4	5324
9727633	(((b * 4) * 3) + (a +68)) * 9	3	4	1071
9727653	(((b * 8) * 3) + (a +22)) * 7	3	4	847
9727693	(((a * 9) - 101) - (b + 62)) * 4 - b	3	4	-564
9727713	((a + 24) - ((b * 6) + 107)) * 9 + b	3	4	-932
9727743	(((a + 43) * 8) - (b - 69)) * 9 - b	3	4	3893
9727843	(((a * 6) - 107) - (b + 46)) * 4 - b	3	4	-560

9727973	4 * ((2 * b)-(5 * a))+(b + a - 81)	3	4	-102
9728043	6 * ((2 * b)-(4 * a))+(b + a - 34)	3	4	-51
9728103	((b - 42) + ((a + 32) * 8)) * 6 - a	3	4	1449
9728123	3 * ((2 * b)-(5 * a))+(b + a - 47)	3	4	-61
9728443	((a + 101) - ((b * 9) + 59)) * 6 + b	3	4	58
9728533	(((b + 88) * 8) + (a - 20)) * 4	3	4	2876
9728693	((b - 36) + ((a + 61) * 5)) * 7 - a	3	4	2013
9728703	7 * ((2+a)+(6 * b))-(a - b + 103)	3	4	101
9728783	((a + 29) - ((b * 9) + 17)) * 6 + b	3	4	-122
9728863	(((a * 6) - 88) - (b + 107)) * 4 - b	3	4	-728
9728973	(((a + 56) * 6) - (b - 73)) * 4 - b	3	4	1688
9729153	((b - 48) + ((a + 76) * 9)) * 8 - a	3	4	5333
9729283	((b - 89) + ((a + 81) * 5)) * 4 - a	3	4	1337
9729293	(((b * 6) * 4) + (a +98)) * 4	3	4	788
9729333	(((a + 14) * 9) - (b - 45)) * 4 - b	3	4	722
9729343	(((a * 5) - 53) - (b + 68)) * 4 - b	3	4	-444
9729553	(((a * 5) - 42) - (b + 15)) * 4 - b	3	4	-188
9729613	3 * ((2+a)+(5 * b))-(a - b + 93)	3	4	-17
9729833	(((b + 97) * 6) + (a - 73)) * 4	3	4	2144
9729873	(((b + 96) * 7) + (a - 21)) * 4	3	4	2728
9730353	(((a + 36) * 5) - (b - 56)) * 7 - b	3	4	1725
9730583	((b - 106) + ((a + 22) * 8)) * 5 - a	3	4	487
9730653	(((a * 7) + 48) + (b - 39)) * 5 + a	3	4	173
9730683	((a + 62) - ((b * 9) + 23)) * 8 + b	3	4	52
9731003	(((a * 9) - 19) - (b + 46)) * 5 - b	3	4	-214
9731263	((a + 77) - ((b * 9) + 19)) * 8 + b	3	4	204
9731333	4 * ((2 * b)-(5 * a))+(b + a - 17)	3	4	-38
9731383	(((a * 8) - 26) - (b + 26)) * 5 - b	3	4	-164
9731483	((b - 78) + ((a + 13) * 7)) * 4 - a	3	4	149
9731593	(((a + 69) * 9) - (b - 98)) * 4 - b	3	4	2964
9731613	6 * ((2 * b)-(5 * a))+(b + a - 100)	3	4	-135
9731623	(((a * 4) - 92) - (b + 40)) * 4 - b	3	4	-500
9731683	7 * ((2 * b)-(5 * a))+(b + a - 69)	3	4	-111

9731763	((a + 25) - ((b * 7) + 81)) * 7 + b	3	4	-563
9731773	(((a + 53) * 7) - (b - 50)) * 9 - b	3	4	3938
9731833	3 * ((2 * b)-(4 * a))+(b + a - 104)	3	4	-109
9731843	4 * ((2 * b)-(6 * a))+(b + a - 11)	3	4	-44
9731913	(((a * 7) + 95) + (b - 53)) * 4 + a	3	4	271
9731983	(((b * 7) + 10) + (a - 16)) * 4 + a	3	4	103
9731993	(((b * 9) * 4) + (a +67)) * 6	3	4	1284
9732303	(((b + 38) * 4) + (a - 60)) * 5	3	4	555