

Homework 1

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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 **must** 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 $((\text{first number} + 28) * 7) - (\text{second number} - 79) * 2$ 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 | formula | sample input 1 | sample input 2 | output |
|---------|---|----------------|----------------|--------|
| 9213773 | $((\text{first number} * 6) + 17) + (\text{second number} - 55) * 2$ | 3 | 5 | -30 |
| 9322943 | $((\text{first number} + 74) - ((\text{second number} * 7) + 72)) * 5$ | 3 | 5 | -150 |
| 9426293 | $((\text{second number} - 84) + ((\text{first number} + 92) * 4)) * 6$ | 3 | 5 | 1806 |
| 9427773 | $((\text{second number} - 65) + ((\text{first number} + 74) * 6)) * 6$ | 3 | 5 | 2412 |
| 9523003 | $((\text{first number} + 55) - ((\text{second number} * 4) + 13)) * 5$ | 3 | 5 | 125 |
| 9524623 | $((\text{first number} * 8) - 81) - (\text{second number} + 63) * 4$ | 3 | 5 | -500 |
| 9526923 | $((\text{second number} - 56) + ((\text{first number} + 42) * 4)) * 6$ | 3 | 5 | 774 |
| 9526983 | $((\text{first number} * 9) - 96) - (\text{second number} + 26) * 4$ | 3 | 5 | -400 |
| 9624443 | $((\text{second number} + 74) * 7) + (\text{first number} - 46) * 3$ | 3 | 5 | 1530 |
| 9624533 | $((\text{first number} + 78) * 8) - (\text{second number} - 102) * 2$ | 3 | 5 | 1490 |
| 9624803 | $((\text{second number} + 85) * 4) + (\text{first number} - 88) * 3$ | 3 | 5 | 825 |
| 9625113 | $((\text{first number} + 19) - ((\text{second number} * 5) + 108)) * 5$ | 3 | 5 | -555 |
| 9625123 | $((\text{second number} + 81) * 5) + (\text{first number} - 82) * 3$ | 3 | 5 | 1053 |
| 9625543 | $((\text{first number} + 88) - ((\text{second number} * 7) + 96)) * 5$ | 3 | 5 | -200 |
| 9625903 | $((\text{first number} + 20) * 8) - (\text{second number} - 31) * 2$ | 3 | 5 | 420 |
| 9626143 | $((\text{first number} + 71) * 4) - (\text{second number} - 83) * 2$ | 3 | 5 | 748 |
| 9626743 | $((\text{second number} + 38) * 8) + (\text{first number} - 78) * 3$ | 3 | 5 | 807 |
| 9626873 | $((\text{first number} + 71) - ((\text{second number} * 8) + 47)) * 5$ | 3 | 5 | -65 |
| 9627123 | $((\text{first number} + 26) * 4) - (\text{second number} - 49) * 2$ | 3 | 5 | 320 |
| 9627133 | $((\text{second number} + 46) * 6) + (\text{first number} - 75) * 3$ | 3 | 5 | 702 |
| 9627173 | $((\text{first number} * 9) + 28) + (\text{second number} - 106) * 2$ | 3 | 5 | -92 |
| 9627193 | $((\text{second number} - 51) + ((\text{first number} + 66) * 5)) * 6$ | 3 | 5 | 1794 |
| 9627343 | $((\text{first number} + 22) - ((\text{second number} * 5) + 49)) * 5$ | 3 | 5 | -245 |
| 9627353 | $((\text{first number} * 5) + 82) + (\text{second number} - 94) * 2$ | 3 | 5 | 16 |
| 9628053 | $((\text{first number} * 6) + 63) + (\text{second number} - 35) * 2$ | 3 | 5 | 102 |
| 9628063 | $((\text{first number} * 7) + 53) + (\text{second number} - 94) * 2$ | 3 | 5 | -30 |
| 9628143 | $((\text{first number} + 54) * 5) - (\text{second number} - 67) * 2$ | 3 | 5 | 694 |
| 9628433 | $((\text{second number} + 60) * 6) + (\text{first number} - 63) * 3$ | 3 | 5 | 990 |
| 9628473 | $((\text{first number} * 7) - 108) - (\text{second number} + 104) * 4$ | 3 | 5 | -784 |
| 9628733 | $((\text{first number} * 5) + 74) + (\text{second number} - 40) * 2$ | 3 | 5 | 108 |

| | | | | |
|---------|---|---|---|------|
| 9628973 | $((\text{first number} + 45) * 5) - (\text{second number} - 56) * 2$ | 3 | 5 | 582 |
| 9628993 | $(\text{second number} - 19) + ((\text{first number} + 84) * 8) * 6$ | 3 | 5 | 4092 |
| 9629063 | $((\text{first number} + 89) - ((\text{second number} * 8) + 92)) * 5$ | 3 | 5 | -200 |
| 9629183 | $((\text{first number} + 108) - ((\text{second number} * 5) + 41)) * 5$ | 3 | 5 | 225 |
| 9629433 | $((\text{first number} * 8) - 10) - (\text{second number} + 106) * 4$ | 3 | 5 | -388 |
| 9629463 | $((\text{first number} * 5) + 72) + (\text{second number} - 35) * 2$ | 3 | 5 | 114 |
| 9629613 | $((\text{first number} * 8) - 68) - (\text{second number} + 109) * 4$ | 3 | 5 | -632 |
| 9629853 | $((\text{first number} * 4) - 94) - (\text{second number} + 32) * 4$ | 3 | 5 | -476 |
| 9630003 | $((\text{first number} + 14) * 8) - (\text{second number} - 29) * 2$ | 3 | 5 | 320 |
| 9630293 | $((\text{first number} * 5) + 19) + (\text{second number} - 91) * 2$ | 3 | 5 | -104 |
| 9630393 | $((\text{first number} + 12) - ((\text{second number} * 6) + 70)) * 5$ | 3 | 5 | -425 |
| 9630513 | $((\text{second number} + 64) * 5) + (\text{first number} - 84) * 3$ | 3 | 5 | 792 |
| 9630623 | $(\text{second number} - 85) + ((\text{first number} + 15) * 9) * 6$ | 3 | 5 | 492 |
| 9630683 | $((\text{first number} * 6) - 66) - (\text{second number} + 51) * 4$ | 3 | 5 | -416 |
| 9631063 | $(\text{second number} - 98) + ((\text{first number} + 68) * 9) * 6$ | 3 | 5 | 3276 |
| 9631383 | $(\text{second number} - 66) + ((\text{first number} + 96) * 6) * 6$ | 3 | 5 | 3198 |
| 9631723 | $((\text{first number} + 92) - ((\text{second number} * 5) + 47)) * 5$ | 3 | 5 | 115 |
| 9631773 | $((\text{first number} * 4) - 40) - (\text{second number} + 97) * 4$ | 3 | 5 | -520 |
| 9631793 | $(\text{second number} - 90) + ((\text{first number} + 17) * 5) * 6$ | 3 | 5 | 90 |
| 9631913 | $((\text{first number} * 9) - 89) - (\text{second number} + 109) * 4$ | 3 | 5 | -704 |
| 9632073 | $((\text{second number} + 99) * 4) + (\text{first number} - 42) * 3$ | 3 | 5 | 1131 |
| 9642633 | $(\text{first number} + 107) - ((\text{second number} * 5) + 11) * 5$ | 3 | 5 | 370 |
| 9625773 | $((\text{second number} + 14) * 8) + (\text{first number} - 23) * 3$ | 3 | 5 | 396 |
| 9626853 | $((\text{first number} + 17) - ((\text{second number} * 8) + 84)) * 5$ | 3 | 5 | -520 |
| 9629273 | $((\text{first number} + 64) - ((\text{second number} * 9) + 12)) * 5$ | 3 | 5 | 50 |
| 9630463 | $(\text{second number} - 86) + ((\text{first number} + 43) * 7) * 6$ | 3 | 5 | 1446 |
| 9631663 | $((\text{first number} * 8) + 85) + (\text{second number} - 52) * 2$ | 3 | 5 | 124 |
| 9631993 | $((\text{first number} + 75) - ((\text{second number} * 7) + 37)) * 5$ | 3 | 5 | 30 |
| 9525173 | $(\text{first number} + 109) - ((\text{second number} * 4) + 83) * 5$ | 3 | 5 | 45 |