

S. No.	Problem 01								
1	Write a program that examines three variables—x, y, and z—and prints the largest odd number among them. If none of them are odd, it should print a message to that effect.								
2	Write a program that asks the user to input 10 integers, and then prints the largest odd number that was entered. If no odd number was entered, it should print a message to that effect.								
3	<p>Translate each of the following mathematical expressions into an equivalent Python expression. You may assume that the math library has been imported (via <code>import math</code>).</p> <p>a) $(3 + 4)(5)$</p> <p>b) $\frac{n(n-1)}{2}$</p> <p>c) $4\pi r^2$</p> <p>d) $\sqrt{r(\cos a)^2 + r(\sin b)^2}$</p> <p>e) $\frac{y^2-y_1}{x^2-x_1}$</p>								
4	<p>Write a program that computes the molecular weight of a carbohydrate (in grams per mole) based on the number of hydrogen, carbon, and oxygen atoms in the molecule. The program should prompt the user to enter the number of hydrogen atoms, the number of carbon atoms, and the number of oxygen atoms. The program then prints the total combined molecular weight of all the atoms based on these individual atom weights:</p> <table> <tr> <th>Atom</th><th>Weight (grams / mole)</th></tr> <tr> <td>H</td><td>1.00794</td></tr> <tr> <td>C</td><td>12.0107</td></tr> <tr> <td>O</td><td>15.9994</td></tr> </table> <p>For example, the molecular weight of water (H_2O) is: $2(1.00794) + 15.9994 = 18.01528$.</p>	Atom	Weight (grams / mole)	H	1.00794	C	12.0107	O	15.9994
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5	<p>Write a program to calculate the area of a triangle given the length of its three sides—<i>a</i>, <i>b</i>, and <i>c</i>—using these formulas:</p> $s = \frac{a + b + c}{2}$ $A = \sqrt{s(s - a)(s - b)(s - c)}$								

6	<p>Write a multiplication game program for kids. The program should give the player ten randomly generated multiplication questions to do. After each, the program should tell them whether they got it right or wrong and what the correct answer is.</p> <pre> Question 1: 3 x 4 = 12 Right! Question 2: 8 x 6 = 44 Wrong. The answer is 48. Question 10: 7 x 7 = 49 Right. </pre>
7	<p>Write a program that counts how many of the squares of the numbers from 1 to 100 end in a 4 and how many end in a 9.</p>
8	<p>Write a program that asks the user to enter a value n, and then computes $(1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}) - \ln(n)$. The \ln function is <code>log</code> in the <code>math</code> module.</p>
9	<p>A number is called a <i>perfect number</i> if it is equal to the sum of all of its divisors, not including the number itself. For instance, 6 is a perfect number because the divisors of 6 are 1, 2, 3, 6 and $6 = 1 + 2 + 3$. As another example, 28 is a perfect number because its divisors are 1, 2, 4, 7, 14, 28 and $28 = 1 + 2 + 4 + 7 + 14$. However, 15 is not a perfect number because its divisors are 1, 3, 5, 15 and $15 \neq 1 + 3 + 5$. Write a program that finds all four of the perfect numbers that are less than 10000.</p>