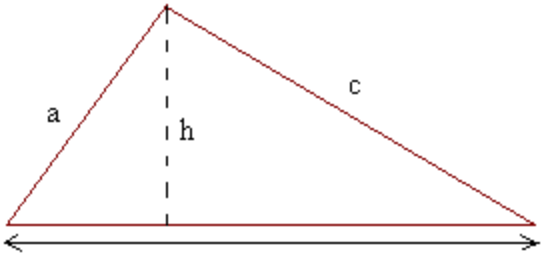
Lecture 3: Variables, Input, if condition

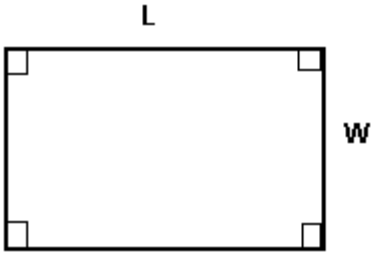
1. Write a C++ program to read base and height of a triangle and then display the area and the Perimeter [hint: A = $\frac{1}{2} x\ base\ x\ height$].



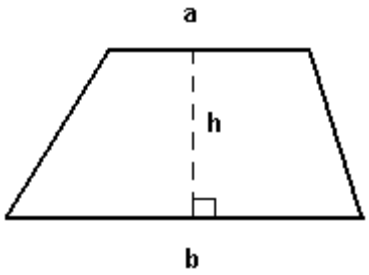
Perimeter = a + b + c

Area = (b × h)/2

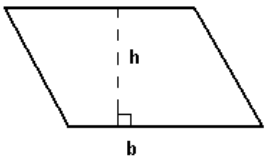
2. Write a C++ program to read dimensions of a rectangle then display the area and circumference.



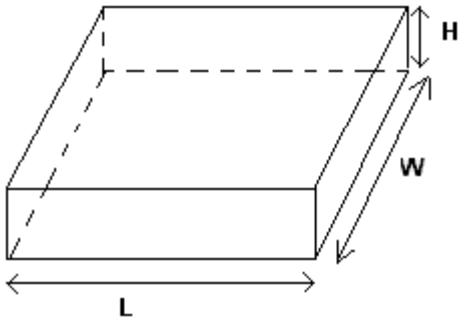
3. Write a C++ program to read two bases of a trapezoid and its height then display the area [hint: $\frac{1}{2} x\ sum\ of\ bases\ x\ height$]



4. Write a C++ program to read base and height of a parallelogram then display the area [hint: $base * heightt$]



5. Write a C++ program to read 3 sides of a Rectangular prism then display the area and volume



Volume = L*W*H

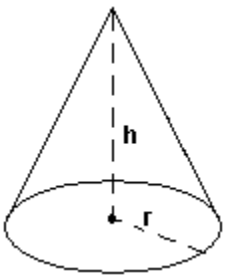
Surface Area = 2(L*W + H*W + H*L)

6. Write a C++ program to read radius of a sphere then display the surface area and volume. Does you answer similar to the one computed by the calculator ?

Volume = (4/3)* Pi * r^3

Surface Area = 4 * Pi * r^2

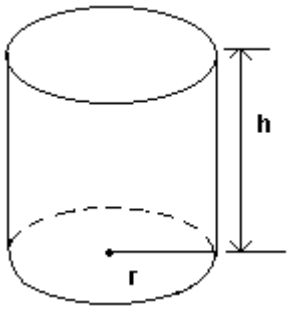
7. Write a C++ program to read radius and height of a cone then display the volume and the surface area.



Volume = (1/3)* Pi * r^2 * h

Surface Area = Pi * r * sqrt (r^2 + h^2)

8. Write a C++ program to read radius and height of a cylinder then display the volume and surface area.



Volume = Pi * r ^{2} * h
Surface Area = 2 * Pi * r * h

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9. Write a C++ to read angle t and radius of a circular sector then compute the area and arclenth.

Arclength: s = r*t
Area = (1/2) *r ^{2} * t
where t is the central angle in **RADIANS**.

10. Write a program to read an angle in radians then display it in degrees
11. Write a program that checks if a number is even or odd using if condition.
12. Create a program to find the largest of three numbers using nested if.
13. Write a program that checks whether a number is positive, negative, or zero.
14. Create a program that assigns a grade based on marks entered by the user.
15. Write a program to check if a year is a leap year.
16. Create a program that uses a switch statement to display a day of the week.
17. Write a program that prints whether a character is a vowel or consonant using if and switch.
18. Create a program that reads an integer and displays whether it's a prime number.
19. Write a program to find whether a character is a digit or alphabet.
20. Create a program that reads an integer and checks if it's a perfect square.
21. Write a program to print the day of the week using a switch statement.
22. Create a program that uses a switch statement to calculate an arithmetic operation.
23. Write a program that asks for a month number and displays the number of days.