

1 Write a program to calculate the percentage of student based on marks of any 5 subjects.

Step 1 - START

Step 2 - Take marks of 5 subjects.

$$m_1 = 95$$

$$m_2 = 96$$

$$m_3 = 97$$

$$m_4 = 98$$

$$m_5 = 99$$

Step 3 - calculate obtained marks.

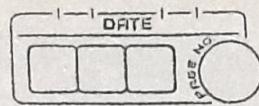
$$\begin{aligned} \text{Obtained marks} &= m_1 + m_2 + m_3 + m_4 + m_5 \\ &= 95 + 96 + 97 + 98 + 99 \\ &= 485 \end{aligned}$$

Step 4 - Calculate percentage.

$$\text{percentage} = \frac{\text{obtain marks}}{\text{Total marks}} \times 100 = \frac{485}{500} \times 100 = 97\%$$

Step 5 - Display calculated percentage
Percentage of 5 subjects is 97

Step 6 - STOP.



2. Write a program to calculate area of rectangle based on length and breadth.

Step - 1 · START

Step 2 · Takes value of l & b

$$l = 8$$

$$b = 5$$

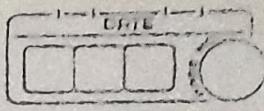
Step 3 · calculate Area of rectangle.

$$\begin{aligned} \text{Area} &= \text{length} \times \text{breadth} \\ &= 8 \times 5 \\ &= 40 \end{aligned}$$

Step 4 - Display Result

The Area of rectangle is 40

Step 5 - STOP



3. Program to find quotient and remainder of two numbers.

Step 1 - START

Step 2 - Takes values of Dividend & divisor.

$$\text{Dividend} = 48$$

$$\text{Divisor} = 5$$

Step 3 - calculate Quotient

$$\begin{aligned}\text{Quotient} &= \text{Dividend} // \text{Divisor} \\ &= 48 // 5 \\ &= 8\end{aligned}$$

Step 4 - calculate Remainder

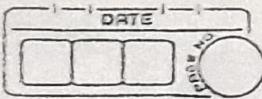
$$\begin{aligned}\text{Remainder} &= \text{Dividend \% Divisor} \\ &= 48 \% 5 \\ &= 8\end{aligned}$$

Step 5 - Display Result

Quotient of two numbers is 8

Remainder of two number is 8

Step 6 - STOP



4. Write program to enter P, T, R and calculate simple Interest

Step 1 - START

Step 2 - Take values of P, T, R.

$$P = 200000$$

$$R = 8 \%$$

$$T = 2$$

Step 3 - calculate simple Interest.

$$\begin{aligned} SI &= \frac{P \times R \times T}{100} = \frac{200000 \times 8 \times 2}{100} \\ &= 16000 \times 2 \\ &= 32000 \end{aligned}$$

Step 4 - Display Result

Simple Interest you need to pay is Rs. 32000

Step 5 - STOP

5. Write program to enter P,T,R and calculate compound interest.

Step 1 - START

Step 2 - Take value of P,T,R

$$P = 20000$$

$$T = 3$$

$$R = 14 \%$$

Step 3 - calculate compound Interest

$$CI = P * \left(1 + \frac{R}{100}\right)^T - P$$

$$= 20000 * \left(1 + \frac{14}{100}\right)^3 - 20000$$

$$= \left(\frac{1+14}{100}\right)^3 * 20000 - 20000$$

$$= (1 + 0.14)^3 * 20000 - 20000$$

$$= (1.14)^3 * 20000 - 20000$$

$$= 1.481544 * 20000 - 20000$$

$$= 29,630.88 - 20000$$

$$= 9,630.88$$

Step 4 - Display Result.

Compound interest is RS 9,630.88

Step 5 - STOP



6. Write a program to input two angles from user and find third angle of the triangle.

Step 1 - START

Step 2 - Take value of two Angles.

$$A_1 = 15$$

$$A_2 = 60$$

Step 3 - calculate Third Angle.

$$\begin{aligned}\text{Third Angle} &= 180 - (A_1 + A_2) \\ &= 180 - (15 + 60) \\ &= 180 - 75 \\ &= 105\end{aligned}$$

Step 4 - Display Result

Third Angle of Triangle is 105

Step 5 - STOP.

7 Program to find the Roots of quadratic equation

Step 1 - START

Step 2 - Take values of a, b, c. (coefficients)

$$a = 1$$

$$b = 5$$

$$c = 6.$$

Step 3 - calculate Discriminant (D)

$$\begin{aligned} D &= b^2 - 4ac \\ &= (5)^2 - 4 \times 1 \times 6 \\ &= 25 - 24 \\ &= 1 \end{aligned}$$

Step 4 - Determine Nature of roots.

since $D > 0$, roots are real.

Step 5 - calculate roots

$$x = \frac{(-b \pm \sqrt{D})}{2a}$$

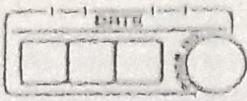
$$= \frac{(-5 \pm \sqrt{1})}{2(1)}$$

$$= \frac{(-5 \pm 1)}{2}$$

$$x_1 = \frac{(-5 + 1)}{2} \quad \text{or} \quad x_2 = \frac{(-5 - 1)}{2}$$

$$= -2$$

$$= -3$$



Step 6 - Display Results

The roots are $x = -2 + x = -3$

Step 7 - STOP

8. Write programs to convert days into years, weeks and days.

Step 1 - START

Step 2 - Take days from user.

$$\text{days} = 1500$$

Step 3 - calculate years

$$\begin{aligned} Y &= \text{days} // 365 \\ &= 1500 // 365 \\ &= 4 \end{aligned}$$

$$\begin{aligned} \text{days} &= \text{days \% 365} \\ &= 40 \end{aligned}$$

Step 4 - calculate weeks

$$\begin{aligned} W &= \text{days} // 7 \\ &= 40 // 7 \\ &= 5 \end{aligned}$$

$$\begin{aligned} \text{days} &= \text{days \% 7} \\ &= 40 \% 7 \\ &= 5 \end{aligned}$$

Step 5 - Display Result.

Step 6 - STOP.



9. Write a program to enter base and height of a triangle and find its area.

Step 1 - START

Step 2 - Take values of base & height.

$$\text{base} = 10$$

$$\text{height} = 15$$

Step 3 - calculate Area of triangle:

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$= \frac{1}{2} \times 10 \times 15$$

$$= 5 \times 15$$

$$= 75$$

Step 4 - Display Result

Area of Triangle is 75

Step 5 - STOP.



10. Write program to calculate area of an equilateral triangle.

Step 1 - START

Step 2 - Takes values of a

$$a = 4$$

Step 3 - calculate area of equilateral triangle

$$\text{Area} = \frac{\sqrt{3}}{4} \times a^2$$

$$= \frac{\sqrt{3}}{4} \times (4)^2$$

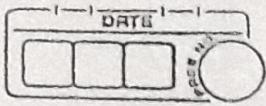
$$= \frac{\sqrt{3}}{4} \times 4 \times 4$$

$$= \sqrt{3} \times 4$$

Step 4 - Display Result

Area of Equilateral triangle is $\sqrt{3} \times 4$

Step 5 - STOP.



11. Find the area & circumference of circle.

Step 1 - START

Step 2 - Take value of radius (r)

$$r = 14$$

Step 3 - calculate Area of circle

$$\text{Area} = \pi r^2$$

$$= \frac{22}{7} \times (14)^2$$

$$= \frac{22}{7} \times 14 \times 14$$

$$= 22 \times 28$$

$$= 616$$

Step 4 - calculate circumference of circle.

$$\text{circumference} = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 14^2$$

$$= 44 \times 22$$

$$= 88$$

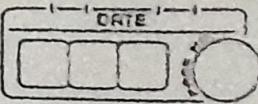
Step 5 - Display result

Area of circle is 616

Circumference of circle is 88

Step 6 - STOP





12. find volume of sphere.

Step 1 - START

Step 2 - Take value of π
 $\pi = 6$

Step 3 - calculate volume of sphere

$$\text{volume} = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \times \frac{22}{7} \times (6)^3$$

$$= \frac{4}{3} \times \frac{22}{7} \times 6^2 \times 6$$

$$= 4 \times \frac{22}{7} \times 2 \times 36$$

$$= 4 \times \frac{22}{7} \times 72$$

$$= \frac{92}{7} \times \frac{288}{1}$$

$$= \frac{22}{7} \times \frac{288 \times 7}{7 \times 7} = \frac{22}{7} \times \frac{288}{7}$$

$$= \frac{6336}{7}$$

$$= 905.14$$

Step 4 - Display Result

Volume of Sphere is 905.14

Step 5 - STOP

