1. Write a program that prompts the user to enter their name and age. Store the name in a variable and the age in another variable. Display the information using `cout`. Variable names should be relevant.

2. Create a program that calculates the area and perimeter of a rectangle. Prompt the user to enter the length and width of the rectangle using `cin`. Display the results using `cout`. Variable names should be relevant.

3. Write a program that asks the user to enter two integers. Store the values in variables and display their sum, difference, product, and quotient using arithmetic operations and `cout`.

4. Develop a program that converts a temperature in Celsius to Fahrenheit. Prompt the user to enter a temperature in Celsius using `cin`. Perform the conversion using the formula `F = (9/5) * C + 32` and display the result using `cout`.

5. Create a program that asks the user to enter three numbers. Store the values in variables and display their average.

6. Write a program that calculates the total cost of an online shopping cart. Prompt the user to enter the price and quantity of three items. Store the values in variables and display the total cost using `cout`.

7. Create a program that calculates the area and circumference of a circle. Prompt the user to enter the radius using `cin`. Perform the calculations using appropriate formulas and display the results using `cout`.

8. Write a program that asks the user to enter a number. Store the value in a variable and display its square and cube using arithmetic operations and `cout`.

9. Develop a program that prompts the user to enter two integers. Store the values in variables and swap their values. Display the swapped values using `cout`.

10. Develop a program that prompts the user to enter the lengths of two sides of a right triangle. Store the values in variables and calculate the length of the hypotenuse using the Pythagorean theorem (`c = sqrt(a^2 + b^2)`). Display the length of the hypotenuse using `cout`.

11. Write a program that asks the user to enter a 3 digit positive integer. Store the value in a variable and calculate the sum of its digits. Display the sum using `cout`. (Hint: Use the modulo operator `%` to extract each digit.)

12. Create a program that prompts the user to enter the length of three sides of a triangle. Store the values in variables and calculate the perimeter of the triangle by summing the lengths of all three sides. Display the perimeter using `cout`.

13. Develop a program that asks the user to enter a number. Store the value in a variable and calculate its cube using the pow() in <cmath> library. Display the cube using `cout`.

14. Write a program that prompts the user to enter a decimal number. Store the value in a variable and round it to the nearest whole number using the `round()` function from the `cmath` library. Display the rounded number using `cout`.

15. Create a program that asks the user to enter the lengths of three sides of a triangle. Store the values in variables and calculate the area of the triangle using Heron's formula: `sqrt(s * (s - side1) * (s - side2) * (s - side3))`, where `s` is the semi-perimeter (`(side1 + side2 + side3) / 2`). Display the area using `cout`.

16. Write a program that asks the user to enter the principal amount, interest rate, and time period (in years) for a simple interest calculation. Store the values in variables and calculate the simple interest using the formula `interest = (principal * rate * time) / 100`. Display the interest using `cout`.

17. Create a program that prompts the user to enter the mass and volume of an object. Store the values in variables and calculate its density using the formula `density = mass / volume`. Display the density using `cout`.

18. Develop a program that asks the user to enter the initial velocity, acceleration, and time. Store the values in variables and calculate the final velocity using the formula `final_velocity = initial_velocity + (acceleration * time)`. Display the final velocity using `cout`.

19. Write a program that prompts the user to enter the radius and height of a cylinder. Store the values in variables and calculate its volume using the formula `volume = pi * radius * radius * height`. Display the volume using `cout`. (Use the constant `M_PI` from the `cmath` library for pi.)

20. Develop a program that prompts the user to enter the length of a side of a cube. Store the value in a variable and calculate its surface area using the formula `surface_area = 6 * side_length * side_length`. Display the surface area using `cout`..

21. Develop a program that asks the user to enter the radius of a sphere. Store the value in a variable and calculate its volume using the formula `volume = (4/3) * pi * radius * radius * radius`. Display the volume using `cout`. (Use the constant `M_PI` for pi.)

22. Write a program that prompts the user to enter the mass and speed of an object. Store the values in variables and calculate its momentum using the formula `momentum = mass * speed`. Display the momentum using `cout`.

23. Create a program that asks the user to enter the lengths of the base and height of a triangle. Store the values in variables and calculate its area using the formula `area = (1/2) * base * height`. Display the area using `cout`.

24. Write a program that asks the user to enter the length, width, and height of a rectangular prism. Store the values in variables and calculate its surface area using the formula `surface_area = 2 * (length * width + length * height + width * height)`. Display the surface area using `cout`.

25. Create a program that prompts the user to enter the initial velocity, acceleration, and displacement. Store the values in variables and calculate the final velocity using the

formula `final_velocity^2 = initial_velocity^2 + 2 * acceleration * displacement`. Display the final velocity using `cout`.

26. Develop a program that asks the user to enter the lengths of two sides and the included angle of a triangle. Store the values in variables and calculate its area using the formula `area = (1/2) * side1 * side2 * sin(angle)`. Display the area using `cout`. (Include the `<cmath>` header and use the `sin()` function.)

27. Write a program that asks the user to enter the mass and acceleration of an object. Store the values in variables and calculate the force using the formula `force = mass * acceleration`. Display the force using `

28. A wheel with a diameter of 20 inches is rolled along the ground. Write a program that prompts the user to enter the number of revolutions the wheel has made. Store the value in a variable and calculate the linear distance traveled by the wheel using the formula `distance = diameter * pi * revolutions`. Display the distance using `cout`.

29. Develop a program that asks the user to enter the masses of two objects and their respective distances from a point. Store the values in variables and calculate the total torque exerted on the point using the formula `torque = mass1 * distance1 + mass2 * distance2`. Display the torque using `cout`.

30. Write a program that prompts the user to enter the number of gear teeth on two gears in a gear train. Store the values in variables and calculate the gear ratio using the formula `gear_ratio = teeth1 / teeth2`. Display the gear ratio using `cout`.

31. Write a program that asks the user to enter the masses of two objects and their respective distances from each other. Store the values in variables and calculate the gravitational force between the objects using the formula `force = (G * mass1 * mass2) / (distance * distance)`, where `G` is the gravitational constant. Display the force using `cout`.

32. Develop a program that asks the user to enter the angular speed (in radians per second) and radius of rotation. Store the values in variables and calculate the linear speed using the formula `linear_speed = angular_speed * radius`. Display the linear speed using `cout`.

33. Develop a program that prompts the user to enter the number of seconds. Store the value in a variable and convert it to minutes and seconds format using integer division and modulus operations. Display the converted value using `cout`.

34. Write a program that prompts the user to enter the force and distance on a lever arm. Store the values in variables and calculate the torque using the formula `torque = force * distance`. Display the torque using `cout`.

35. Write a program that asks the user to enter the radius and angular speed (in revolutions per minute) of a wheel. Store the values in variables and calculate the linear speed using the formula `linear_speed = (2 * pi * radius * angular_speed) / 60`. Display the linear speed using `cout`. (Include the `<cmath>` header and use the constant `M_PI` for pi.)

36. Create a program that prompts the user to enter the time taken and distance traveled by an object. Store the values in variables and calculate the average speed using the formula `average_speed = distance / time`. Display the average speed using `cout`.

37. Write a program that prompts the user to enter an angle in degrees. Store the value in a `double` variable and convert it to radians using the formula `radians = degrees * (M_PI / 180)`. Display the angle in radians using `cout`.

38. Create a program that asks the user to enter the lengths of two sides of a right triangle. Store the values in variables and calculate the value of one of the acute angles using the `acos()` function from the `cmath` library. Display the angle in degrees using `cout`.

39. Develop a program that prompts the user to enter the lengths of three sides of a triangle. Store the values in variables and use the Law of Cosines to calculate one of the angles using the `acos()` function. Display the angle in degrees using `cout`.

40. Write a program that asks the user to enter the lengths of two sides of a triangle and the included angle between them (in degrees). Store the values in variables and use the Law of Cosines to calculate the length of the third side. Display the length of the third side using `cout`.

41. Create a program that prompts the user to enter the lengths of three sides of a triangle. Store the values in variables and use the Law of Sines to calculate one of the angles using the `asin()` function. Display the angle in degrees using `cout`.