22. Use the law of cosine to find the length of a side of a triangle, given the lengths of two sides and the included angle.
(Formula: Cosine Law: $c^2 = a^2 + b^2 - 2abcosC$)

Sample output:

a = 60, b = 45, C = 36°
c = 35.4401

23. A round cake can be divided into 4 pieces with 2 cuts. A quadratic function has been established to show the relationship between the number of cuts, x and the maximum number of pieces, y.

$$y = \frac{1}{2}\left(x + \frac{1}{2}\right)^2 + \frac{7}{8}$$

Write a program to find the maximum number of pieces for each number of cuts: 2, 3, 4, 5 or 6.

24. Copy and run the following program segment.Check the results with your calculator. What do you notice?

```
public static void main( ) {
        float  half = 1 /  2f;
        float  third = 1 /  3f;
        float  fourth = 1 / 4f;
        float  fifth = 1 /  5f;
        float  sixth = 1 / 6f;
        float  seventh = 1 / 7f;
        float  eighth = 1 / 8f;
        float  nineth = 1 / 9f;
        System.out.println(" 1/2 = "  +  half);
        System.out.println(" 1/3 = "  +  third);
        System.out.println(" 1/4 = "  +  fourth);
        System.out.println(" 1/5 = "  +  fifth);
        System.out.println(" 1/6 = "  +  sixth);
        System.out.println(" 1/7 = "  +  seventh);
        System.out.println(" 1/8 = "  +  eighth);
        System.out.println(" 1/9 = "  +  nineth);
}
```

Note:
You may notice that there are small roundoff errors in some of the above cases. It is because, like most computers, the Java Virtual Machine uses the binary system to represent numbers. Therefore, there may be a discrepancy between Java's float type and the real number system of mathematics.You may reasonably conclude that the floating-point numbers are only an approximate simulation of the real number system.