KARSTEN'S ALGORITHM

This is the algorithm referred to in the 'Introduction to Algorithms' video in Week 5.

This is also available as a text file (Week5 updategame Algorithm) in the downloaded game frameworks's TheGame versions folder. Spot any mistakes or omissions in this algorithm.

```
If the ball moves down on the screen perform potential paddle collision
    Get actual distance between the mBall and the ball being checked.

    Check if the actual distance is lower than the allowed => collision
        Get the present velocity

        Change the direction of the ball

        Get the velocity after the collision

        using the fraction between the original velocity and present
        velocity

        to calculate the needed speeds in X and Y to get the original
        velocity but with the new angle.

Move the ball's X and Y using the speed (pixel/sec)


Check if the ball hits either the left side or the right side of the screen
But only do something if the ball is moving towards that side of the screen
    change the direction of the ball in the X direction



Get distance between red ball and smiley ball
Check if the actual distance is lower than the allowed => collision
    Get the present velocity

    Change the direction of the ball

    Get the velocity after the collision


    using the fraction between the original velocity
    and present velocity o to calculate the needed
```

```
        speeds in X and Y to get the original velocity but
        with the new angle.

        increase score


Loop through all SadBalls
        Perform collisions (if necessary) between SadBall in current position and
        the red ball

        Get actual distance between the mBall and the ball being checked


        Check if the actual distance is lower than the allowed => collision

            Get the present velocity

            Change the direction of the ball

            Get the velocity after the collision

            using the fraction between the original velocity and present velocity


            to calculate the needed speeds in X and Y to get the original velocity but
            with the new angle.



If the ball goes out of the top of the screen and moves towards the top of the
screen
            change the direction of the ball in the Y direction


If the ball goes out of the bottom of the screen
            lose the game
```