1. Digitize a line from point to point using DDA line drawing algorithm and plot the results. List the advantages and disadvantages of DDA algorithm.
2. Apply Bresenham’s line drawing algorithm to rasterize the line that connects the point (2,5) to (5,10). Plot the results.
3. Write the expressions for midpoint circle drawing algorithm using the Cartesian model X²+Y²=R².

Using the expressions, find the points on one octants of a circle centred at (0, 0) and having a radius of 8 units. Finally plot the circle.

1. Derive the midpoint circle drawing algorithm. Using the expressions, find the points on one octants of a circle centred at and having a radius of units. Finally plot the circle.

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| **RANDOM or VECTOR SCAN**  (It is also called stroke-writing display, or calligraphic display) | **RASTER SCAN** |
| 1. It has high resolution | Its resolution is low |
| 1. It is more expensive | It is less expensive |
| 1. Any modification if needed is easy | Modification is tough |
| 1. Solid pattern is tough to fill | Solid pattern is easy to fill |
| 1. Refresh rate depends on resolution | Refresh rate does not depend on the picturte |
| 1. Only screen with view on area is displayed | Whole screen is scanned |
| 1. Beam penetration technology come under it | Shadow mask technology come under this |
| 1. It does not use interlacing method | It uses interlacing |
| 1. It is restricted to line drawing applications | It is suitable for realistic display |

The **refreshing rate**, called the frame rate, is normally 60 to 80 frames per second.

Picture definitions is stored in a memory area called the **frame buffer**. This frame buffer stores the intensity values for all the screen points. Each screen point is called a **pixel** (picture element).

On black and white systems, the frame buffer storing the values of the pixels is called a **bitmap**. Each entry in the bitmap is a 1-bit data which determine the ON (1) and OFF (0) of the intensity of the pixel. On color systems, the frame buffer storing the values of the pixels is called a **pixmap**. Each entry in the pixmap occupies a number of bits to represent the color of the pixel.