$\therefore$ $d_{init} = 4b^2 x_p - 8a^2 y_p + 4a^2 + b^2$

$\therefore$ $d_S = 12a^2 - 8a^2 y_p$

$\therefore$ $d_{SE} = 12a^2 - 8a^2 y_p + 8b^2 x_p + 8b^2$

Now,

```
void MidPoint Ellipse (int a, int b, int xp, int yp, int value)
{   int dx = 2*a*a*yp;
    int dy = -2*b*b*xp;
    int dinit = 4*b*b*xp - 8*a*a*yp + a*a*4 + b*b;
    int ds = 12*a*a - 8*a*a*yp;
    int dSE = 12*a*a - 8*a*a*yp + 8*b*b*xp + 8*b*b;
    EllipsePoint (xp, yp, value);
    while (dx < dy) {
            if (dinit < 0) {
                dinit = dinit + ds;
                yp--; }
            else        {
                dinit = dinit + dSE;
                yp--;
                xp++; }
            EllipsePoint (xp, yp, value); }
}
```