

ME 1020 Engineering Programming with MATLAB

Problem 5.32:

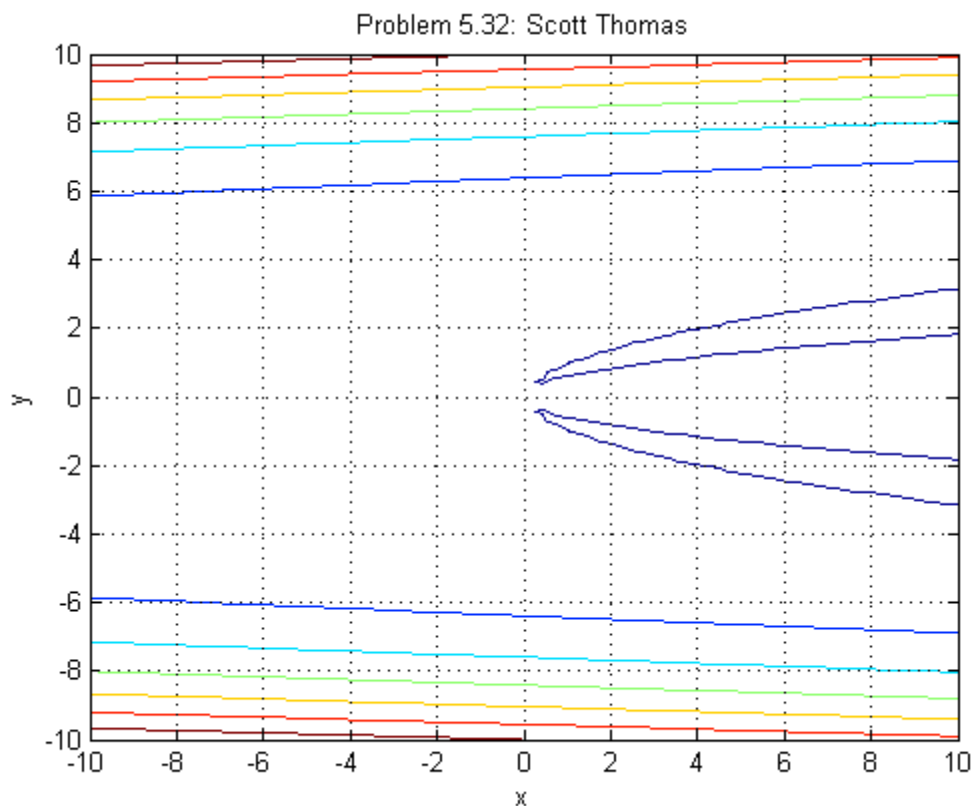
32. Obtain the surface and contour plots for the function $z = (x - y^2)(x - 3y^2)$. This surface has a singular point at $x = y = 0$, where the surface has zero slope, but this point does not correspond to either a minimum or a maximum. What type of contour lines corresponds to a singular point?

```
% Problem 5.32
clear
clc
disp('Problem 5.32: Scott Thomas')

N = 70;
x = linspace(-10,10,N);
y = linspace(-10,10,N);
[X,Y] = meshgrid(x,y);
Z = (X - Y.^2).*(X - 3*Y.^2);

%mesh(X,Y,Z)
contour(X,Y,Z)
ylabel('y'), xlabel('x'), zlabel('z')
title('Problem 5.32: Scott Thomas')
grid on
```

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