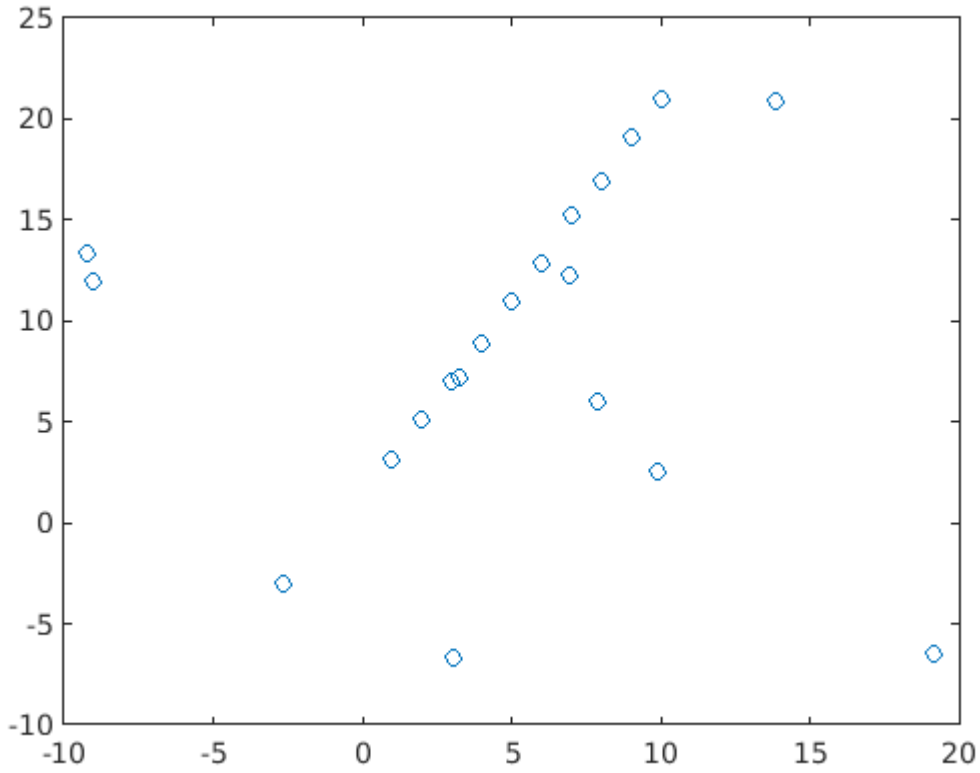
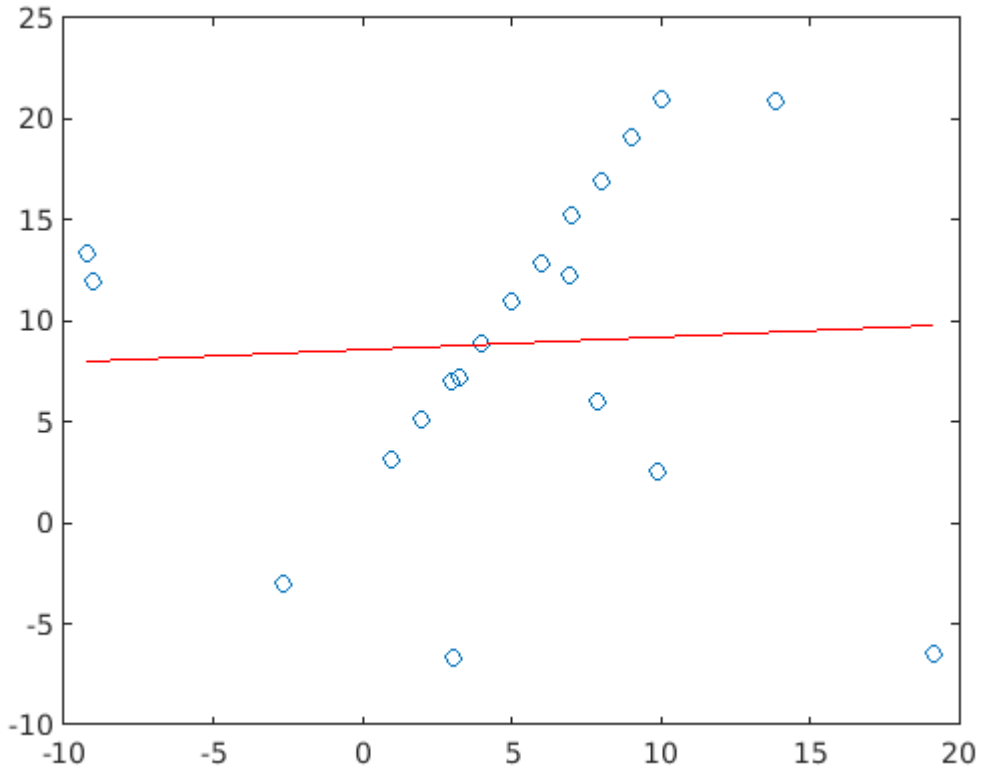
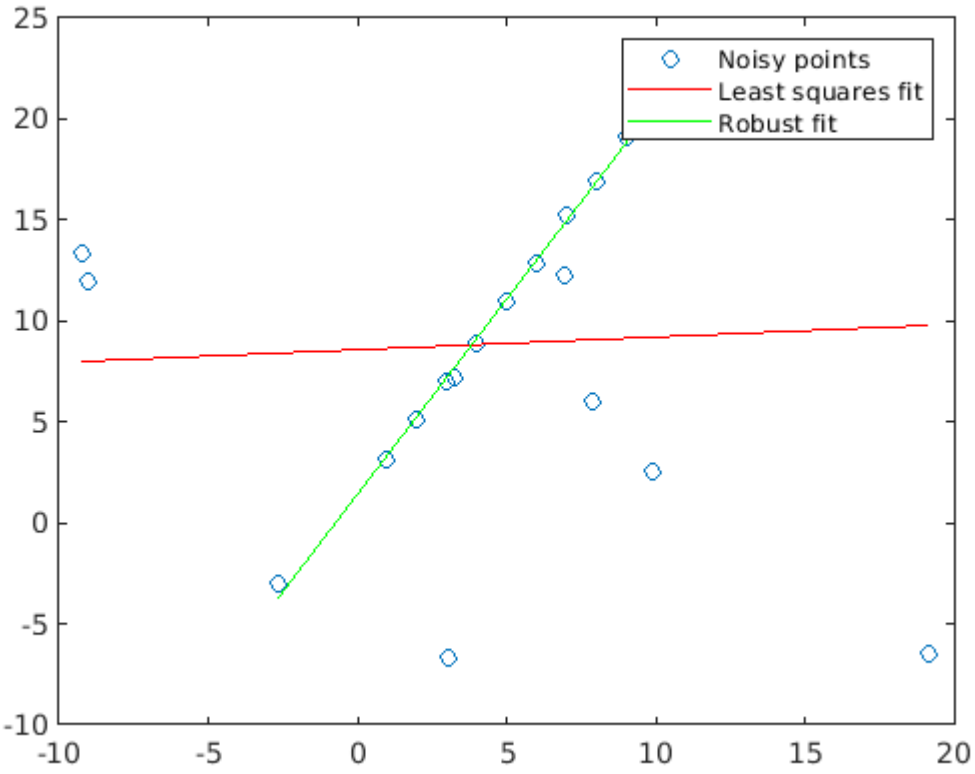
```
% NAME: SHRIRANG ALIAS SAMARTH PATIL
% REG.NO.: 19BAI10079
%RANSAC Algorithm
load pointsForLineFitting.mat
plot(points(:,1),points(:,2),'o');
hold on
```




```
modelLeastSquares = polyfit(points(:,1),points(:,2),1);
x = [min(points(:,1)) max(points(:,1))];
y = modelLeastSquares(1)*x + modelLeastSquares(2);
plot(x,y,'r-')
```




```
sampleSize = 2; % number of points to sample per trial
maxDistance = 2; % max allowable distance for inliers
fitLineFcn = @(points) polyfit(points(:,1),points(:,2),1); % fit function using polyfit
evalLineFcn = ...   % distance evaluation function
  @(model, points) sum((points(:, 2) - polyval(model, points(:,1))).^2,2);
[modelRANSAC, inlierIdx] = ransac(points,fitLineFcn,evalLineFcn, ...
  sampleSize,maxDistance);
modelInliers = polyfit(points(inlierIdx,1),points(inlierIdx,2),1);
inlierPts = points(inlierIdx,:);
x = [min(inlierPts(:,1)) max(inlierPts(:,1))];
y = modelInliers(1)*x + modelInliers(2);
plot(x, y, 'g-')
legend('Noisy points','Least squares fit','Robust fit');
hold off
```


Noisy points
Least squares fit
Robust fit
25
20
15
10
5
0
-5
-10
-10
-5
0
5
10
15
20