question 1

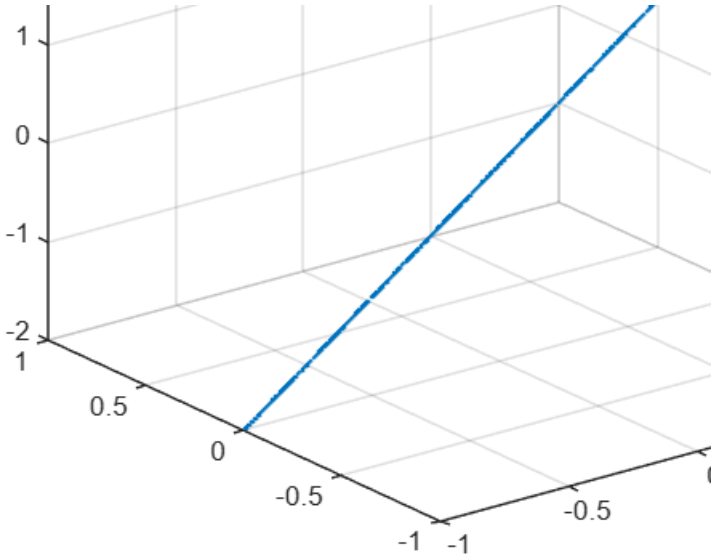
```
b1=[1;0;2]
```

```
b1 = 3×1
     1
     0
     2
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:1000
k1=-1+2*rand(1);
pts=[pts,k1*b1];

end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```




```

```

question 2

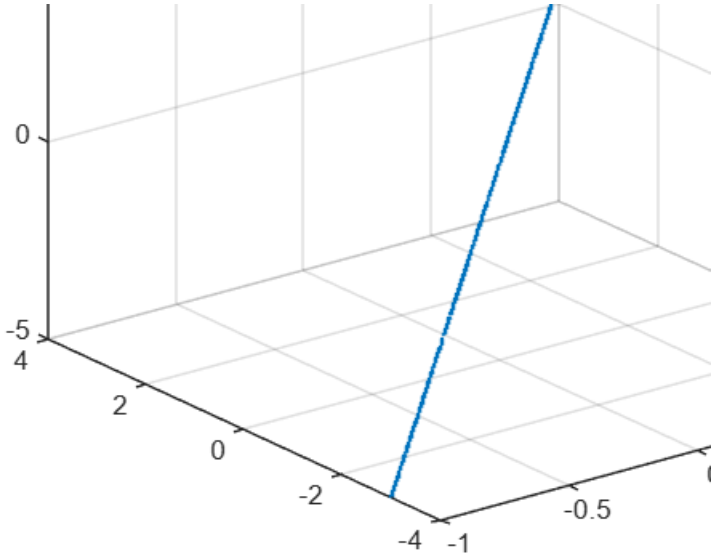
```
b1=[1;3;5]
```

```
b1 = 3×1
     1
     3
     5
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:1000
k1=-1+2*rand(1);
pts=[pts,k1*b1];

end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```




```

```

question 3

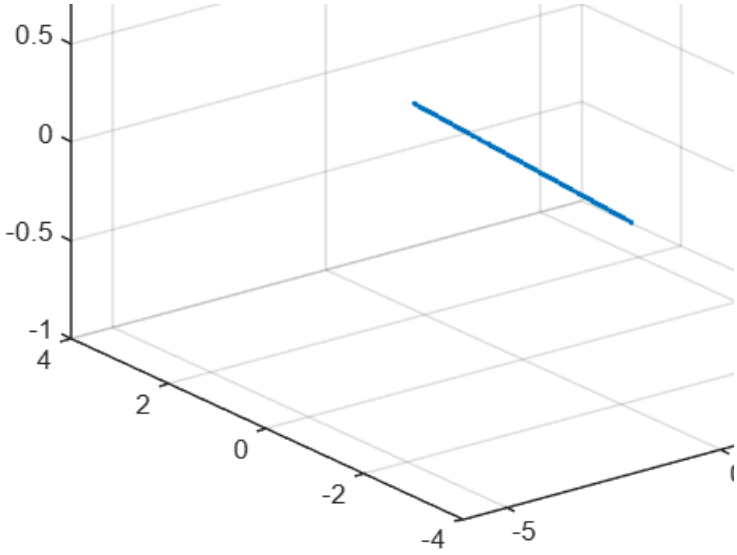
```
b1=[-6;-3;1]
```

```
b1 = 3×1
    -6
    -3
     1
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:1000
k1=-1+2*rand(1);
pts=[pts,k1*b1];
end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 4

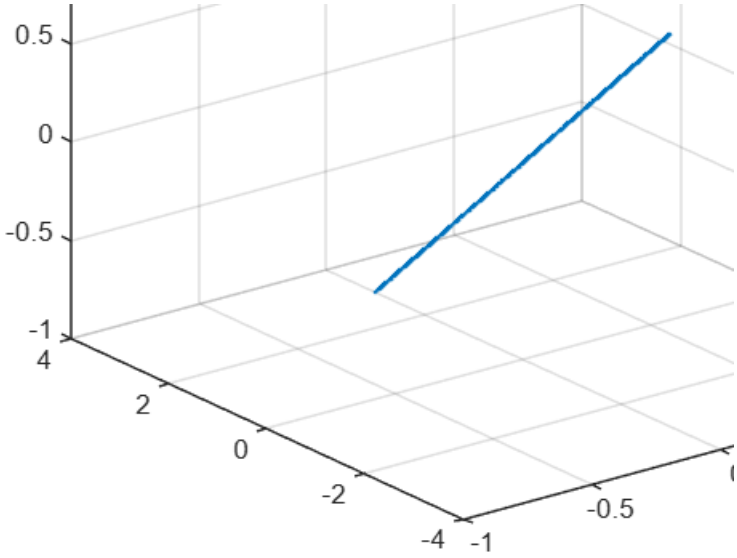
```
b1=[0;-3;1]
```

```
b1 = 3×1
     0
    -3
     1
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:1000
k1=-1+2*rand(1);
pts=[pts,k1*b1];
end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 5

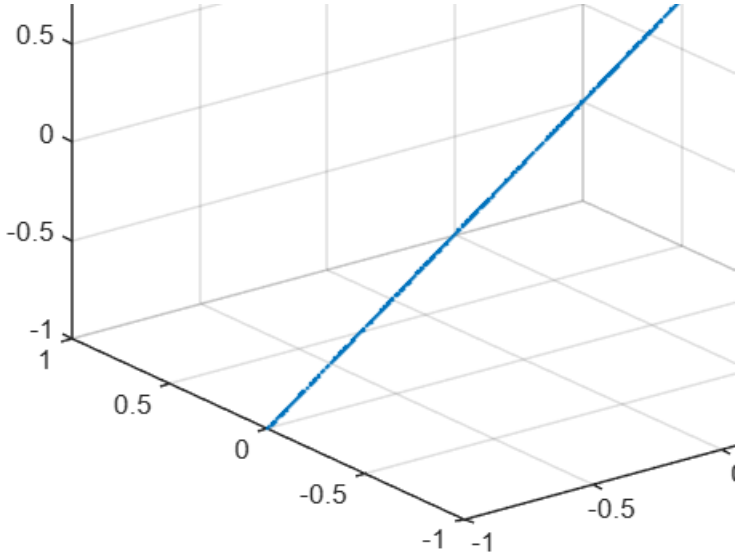
```
b1=[1;0;1]
```

```
b1 = 3×1
     1
     0
     1
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:1000
k1=-1+2*rand(1);
pts=[pts,k1*b1];
end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 6

```
b1=[1;0;2]
```

```
b1 = 3×1
     1
     0
     2
```

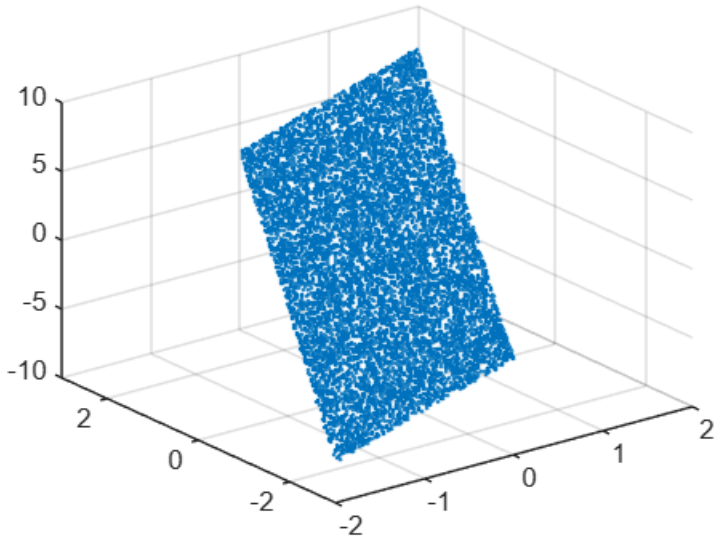
```
b2=[1;3;5]
```

```
b2 = 3×1
     1
     3
     5
```

```
pts=[]
```

```
pts =

     []
```

```
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 7

```
b1=[1;0;2]
```

```
b1 = 3×1
     1
     0
     2
```

```
b2=[1;3;5]
```

```
b2 = 3×1
     1
     3
     5
```

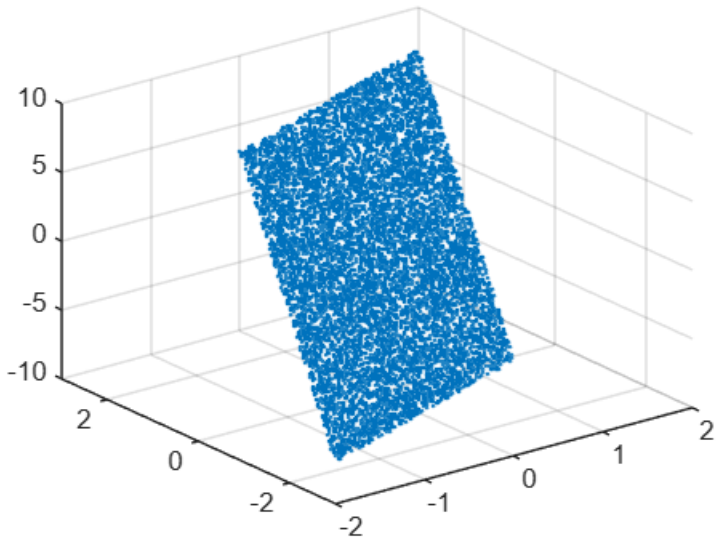
```
pts=[]
```

```
pts =

     []
```

```
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
pts
```

```
pts = 3×10000
    0.5178    0.8577    0.6899   -1.2360   -1.3641   -0.5997    0.9256    1.0575 ···
   -0.0113    1.1215    2.2144   -1.7345   -2.9568   -1.4542    0.1008    1.0844
    1.0243    2.8370    3.5941   -4.2064   -5.6850   -2.6536    1.9521    3.1994
```

```
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 8

```
b1=[2;5;1]
```

```
b1 = 3×1
     2
     5
     1
```

```
b2=[1;1;-6]
```

```
b2 = 3×1
     1
     1
    -6
```

```
pts=[]
```

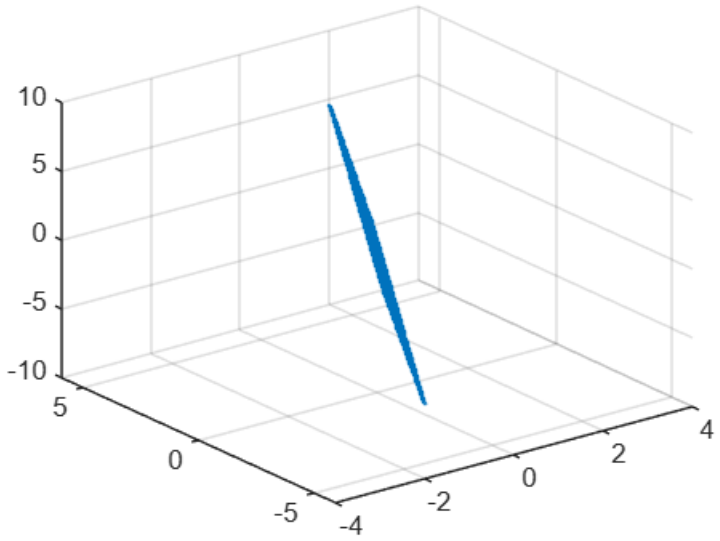
```
pts =

     []
```

```
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
pts
```

```
pts = 3×10000
    0.4388    1.6139    1.3349   -2.0447    0.6586   -1.0003    1.4913    1.9980 ···
```

```
    2.4759    3.9459    3.0121   -4.6635    0.8398   -3.7460    3.9730    3.8727
    6.1953    0.4218   -0.7418    0.9201   -3.1663   -5.8965    1.8059   -3.8641
```

```
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```




```
```

question 9

```
b1=[2;5;1]
```

```
b1 = 3×1
     2
     5
     1
```

```
b2=[1;1;-6]
```

```
b2 = 3×1
     1
     1
    -6
```

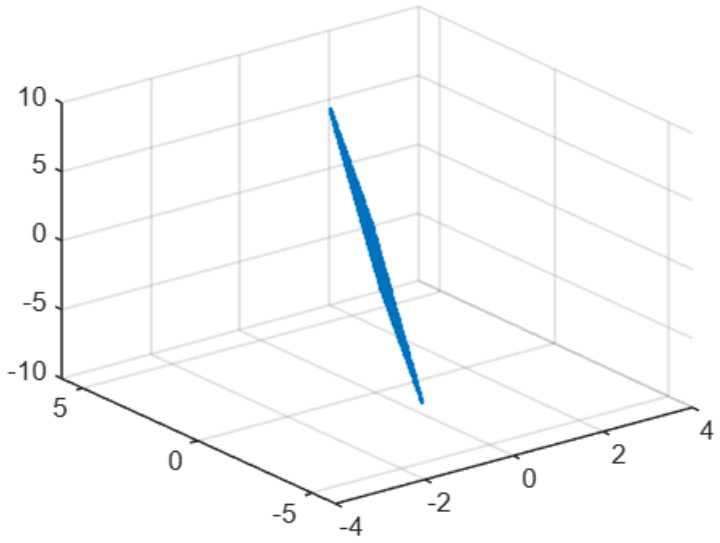
```
pts=[]
```

```
pts =

     []
```

```
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
pts
```

```
pts = 3×10000
   -1.1596   -0.5388    0.1557    0.3510    0.7128   -1.8938    0.9632    0.5080 ···
   -3.6199   -1.0076   -0.7998    0.6950    0.6742   -4.4949    1.1744    0.6858
   -3.7034    1.2016   -5.0742   -0.6158   -4.4436    0.0918   -4.8643   -2.2779
```

```
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```



question 10

```
b1=[1;1;0]
```

```
b1 = 3×1
     1
     1
     0
```

```
b2=[0;1;0]
```

```
b2 = 3×1
     0
     1
     0
```

```
pts=[]
```

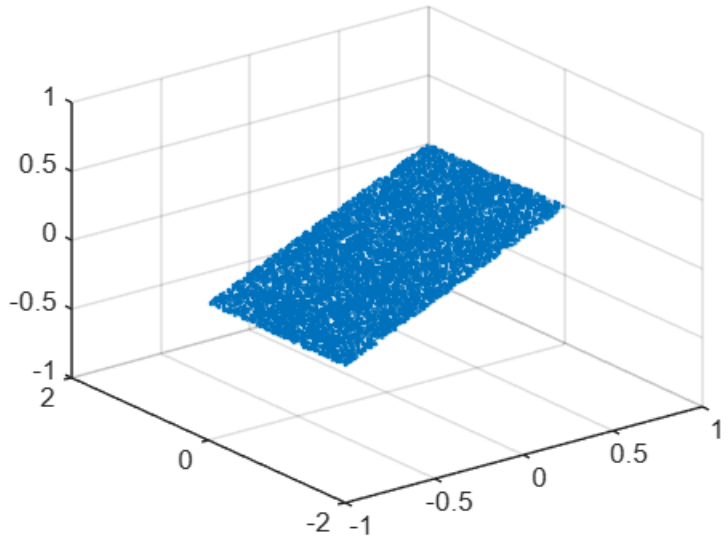
```
pts =

     []
```

```
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
```

```
pts
```

```
pts = 3×10000
    0.6756   -0.7666    0.6172    0.7197   -0.0111    0.5911   -0.1515   -0.6674 ···
   -0.3133   -0.9195   -0.2134    0.8567    0.7950   -0.1235   -0.1397   -0.1950
         0         0         0         0         0         0         0         0
```

```
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```




```
```

question 11

```
b1=[1;2]
b2=[-2;1]
pts=[]
for i=1:10000
k1=-1+2*rand(1);
k2=-1+2*rand(1);
pts=[pts,k1*b1+k2*b2];
end
pts
scatter3(pts(1,:),pts(2,:),pts(3,:),1);
```