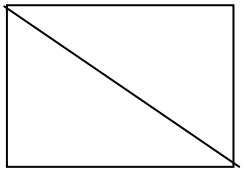
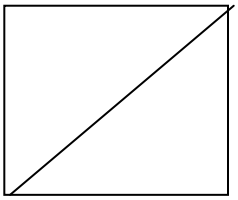
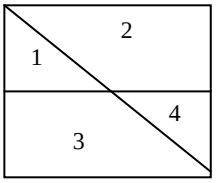
3310) Outer square size is 300x300 pixel.

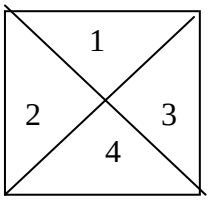
a.1)bottom triangle is white, upper triangle is black (gray level picture)
a.2)bottom triangle is red, upper triangle is blue
b.1)bottom triangle is white, upper triangle is black (gray level picture)
b.2)bottom triangle is red, upper triangle is blue
c.1)1:black 2:white 3:white 4:black.
c.2)1:red 2:green 3:blue 4:yellow
d.1)1:black 2:white 3:white 4:black.
d.2)1:green 2:red 3:red 4:green


a)


b)



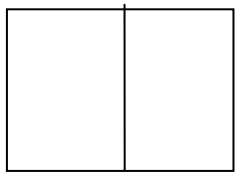
c)

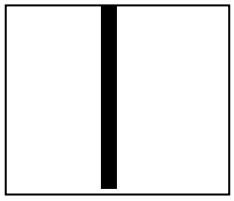


d)

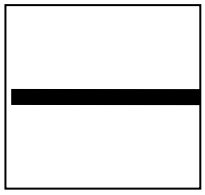
3410) Square size=200x200 pixel. Thin line=1 pixel, thick line=5 pixel.

a.1)square is black, middle line is white. (gray level picture)
a.2)square is red , middle line is blue.
a.3)square is red , middle line is yellow.
b.1)square is black, middle line is white. (gray level picture)
b.2)square is red , middle line is blue.
b.3)square is red , niddle line is yellow.


a)

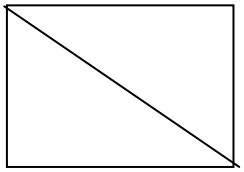

b)

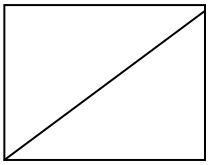

c)

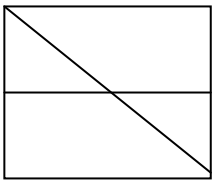

d)

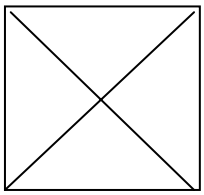
3420) Square size=200x200 pixel. line=1 pixel,

a.1)square color is black, diagonal line color is white. (gray level picture)
a.2)square color is red, diagonal line color is blue.
a.3)square color is red, diagonal line color is white.
a.4)square color is red, diagonal line color is black.
a.5)square color is red, diagonal line color is yellow.


a)


b)

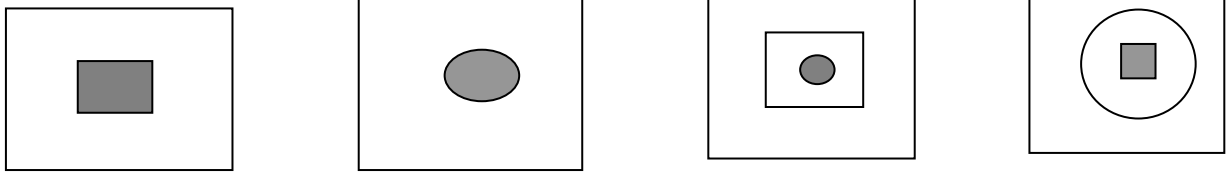

c)


d)

b.1)square color is black, diagonal line color is white. (gray level picture)
b.2)square color is red, diagonal line color is blue.

b.3)square color is red, diagonal line color is white.
c.1)square color is black, diagonal lines color is white. (gray level picture)
c.2)square color is red, diagonal lines color is blue.
c.3)square color is red, diagonal lines color is white.
d.1)square color is black, diagonal lines color is white. (gray level picture)
d.2)square color is red, diagonal lines color is white.

3430) a.1) Outer squre is 200x200, color black. Inner square 50x50, color=white (gray level)
a.2) Outer squre is 200x200, color red. Inner square 50x50, color=blue
a.3) Outer squre is 200x200, color red. Inner square 50x50, color=white
b.1) Outer squre is 200x200, color black. Inner circle radius 50, color=white (gray level)
b.1) Outer squre is 200x200, color red. Inner circle radius 50, color=blue
b.3) Outer squre is 200x200, color red. Inner circle radius 50, color=white



a) b) c) d)

c.1) Outer squre is 200x200,color black;
middle square 100x100, color white
Inner circle radius 50, color=black
c.2) Outer squre is 200x200,color red;
middle square 100x100, color blue
Inner circle radius 50, color=yellow
d.1) Outer squre is 200x200,color black;
middle circle radius 50, color=white
inner square 50x50, color black

```
%3430 d.1
clear all
aa=uint8(0*ones(200,200));
for kk=1:200,
   for jj=1:200,
      qqq=(100-jj)^2+(100-kk)^2;
      if  sqrt(qqq)<50, aa(kk,jj)=255;  end;
 end; end;
aa(75:125,75:125)=0;
imshow(aa)
return
```

```
%3430 c.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;
aa(50:150,50:150,[1,2])=0;
aa(50:150,50:150,3)=255;
for kk=1:200,
   for jj=1:200,
      qqq=(100-jj)^2+(100-kk)^2;
      if  sqrt(qqq)<50, aa(kk,jj,[1,2])=255;
         aa(kk,jj,3)=0;  end;
 end; end;
imshow(aa)
return
```

```
%3430 c.1
clear all
aa=uint8(0*ones(200,200));
aa(50:150,50:150)=255;
for kk=1:200,
   for jj=1:200,
      qqq=(100-jj)^2+(100-kk)^2;
      if  sqrt(qqq)<50, aa(kk,jj)=0;  end;
 end; end;
imshow(aa)
return
```

```
%3430 b.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;
for kk=1:200,
   for jj=1:200,
      qqq=(100-jj)^2+(100-kk)^2;
      if  sqrt(qqq)<50, aa(kk,jj,[1,2])=0;
         aa(kk,jj,3)=255;  end;
 end; end;
imshow(aa)
return
```

```
%3430 b.1
clear all
aa=uint8(0*ones(200,200));
for kk=1:200,
   for jj=1:200,
      qqq=(100-jj)^2+(100-kk)^2;
      if  sqrt(qqq)<50, aa(kk,jj)=255;  end;
 end; end;
imshow(aa)
return
```

```
%3430 a.3
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;
aa(75:125,75:125,:)=255;
imshow(aa)
return
```

```
%3430 a.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;
aa(75:125,75:125,[1,2])=0;
aa(75:125,75:125,3)=255;
imshow(aa)
return
```

```
%3430 a.1
clear all
aa=uint8(0*ones(200,200));
aa(75:125,75:125)=255;
imshow(aa)
return
```

```
%3420 d.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;
for kk=1:200,
   for jj=1:200,
      if jj==kk | (200-jj)==kk, aa(kk,jj,:)=255; end;
 end; end;
imshow(aa)
return
```

```
%3420 d.1
clear all
aa=uint8(0*ones(200,200));
for kk=1:200,
   for jj=1:200,
      if jj==kk | (200-jj)==kk, aa(kk,jj)=255; end;
 end; end;
imshow(aa)
return


%3420 c.3
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
aa(100,:,:)=255;  %middle line
for kk=1:200,
   for jj=1:200,
      if  jj==kk, aa(kk,jj,:)=255;  end;
 end; end;
imshow(aa)
return


%3420 c.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
aa(100,:,[1,2])=0; aa(100,:,3)=0;  %middle line
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj,[1,2])=0; aa(kk,jj,3)=255; end;
 end; end;
imshow(aa)
return

%3420 c.1
clear all
aa=uint8(0*ones(200,200));
aa(100,:)=255;
for kk=1:200,
   for jj=1:200,
      if 200-jj==kk, aa(kk,jj)=255; end;
 end; end;
imshow(aa)
return


%3420 b.3
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if 200-jj==kk, aa(kk,jj,:)=255;  end;
 end; end;
imshow(aa)
return


%3420 b.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if 200-jj==kk, aa(kk,jj,[1,2])=0; aa(kk,jj,3)=255;
end;
 end; end;
imshow(aa)
return

%3420 b.1
clear all
aa=uint8(0*ones(200,200));
for kk=1:200,
   for jj=1:200,
      if 200-jj==kk, aa(kk,jj)=255; end;
 end; end;
imshow(aa)
return


%3420 a.5
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj,[1,2])=255; aa(kk,jj,3)=0;  end;
 end; end;
imshow(aa)
return


%3420 a.4
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj,:)=0;  end;
 end; end;
imshow(aa)
```

```
return


%3420 a.3
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj,:)=255;  end;
 end; end;
imshow(aa)
return


%3420 a.2
clear all
aa=uint8(0*ones(200,200,3));
aa(:,:,1)=255;  %red color
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj,[1,2])=0; aa(kk,jj,3)=255; end;
 end; end;
imshow(aa)
return



%3420 a.1
clear all
aa=uint8(0*ones(200,200));
for kk=1:200,
   for jj=1:200,
      if jj==kk, aa(kk,jj)=255; end;
 end; end;
imshow(aa)
return


%3310 d.3
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(98:102,:,[1,2])=255;  aa(98:102,:,3)=0;
imshow(aa)
return


%3310 d.2
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(98:102,:,[1,2])=0;  aa(98:102,:,3)=255;
imshow(aa)
return
%3310 d.1
clear all
aa=uint8(0*ones(200,200));   aa(98:102,:)=255;
imshow(aa)
return


%3310 c.3
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(100,:,[1,2])=255;  aa(100,:,3)=0;
imshow(aa)
return


%3310 c.2
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(100,:,[1,2])=0;  aa(100,:,3)=255;
imshow(aa)
return



%3310 c.1
clear all
aa=uint8(0*ones(200,200));   aa(100,:)=255;
imshow(aa)
return


%3310 b.3
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(:,98:102,[1,2])=255;  aa(:,98:102,3)=0;
imshow(aa)
return


%3310 b.2
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(:,98:102,[1,2])=0;  aa(:,98:102,3)=255;
imshow(aa)
return


%3310 b.1
clear all
aa=uint8(0*ones(200,200));   aa(:,98:102)=255;
imshow(aa)
```

```
return

%3310 a.3
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(:,100,[1,2])=255;  aa(:,100,3)=0;
imshow(aa)

%3310 a.2
clear all
aa=uint8(0*ones(200,200,3));
   aa(:,:,1)=255;
   aa(:,100,[1,2])=0;  aa(:,100,3)=255;
imshow(aa)

%3310 a.1
clear all
aa=uint8(0*ones(200,200));   aa(:,100)=255;
imshow(aa)
return


%3310 d.2
aa=uint8(255*ones(300,300,3));
for kk=1:300,
   for jj=1:300,
      if kk<150,
         if  kk>jj | kk>300-jj, aa(kk,jj,1)=255;
                                aa(kk,jj,[2,3])=0;
         else   aa(kk,jj,[1,3])=0; aa(kk,jj,2)=255;
        end;
      else    % kk>150
         if  kk<jj | kk<300-jj, aa(kk,jj,1)=255;
                                aa(kk,jj,[2,3])=0;
         else   aa(kk,jj,[1,3])=0; aa(kk,jj,2)=255;
        end;
     end;
 end; end;
imshow(aa)

clear all
%3310 d.1
aa=uint8(255*ones(300,300));   black=0;  white=255;
for kk=1:300,
   for jj=1:300,
      if kk<150,
         if  kk>jj | kk>300-jj, aa(kk,jj)=white;
         else aa(kk,jj)=black;  end;
      else % kk>150
         if  kk<jj | kk<300-jj, aa(kk,jj)=white;
        else aa(kk,jj)=black;  end;
     end;
 end; end;
imshow(aa)


clear all
%3310 c.2
aa=uint8(255*ones(300,300,3));
for kk=1:300,
   for jj=1:300,
      if kk<150,
         if  kk>jj, aa(kk,jj,1)=255;  aa(kk,jj,[2,3])=0;
         else      aa(kk,jj,[1,3])=0;  aa(kk,jj,2)=255;
          end;
      else % kk>150
         if  kk>jj, aa(kk,jj,[1,2])=0;  aa(kk,jj,3)=255;
         else      aa(kk,jj,[1,2])=255;  aa(kk,jj,3)=0;
end;
      end;
 end; end;
imshow(aa)


clear all
%3310 c.1
aa=uint8(255*ones(300,300));   black=0;  white=255;
for kk=1:300,
  for jj=1:300,
    if kk<150,
      if  kk>jj, aa(kk,jj)=black; else aa(kk,jj)=white;
end;
    else    % kk>150
      if  kk>jj, aa(kk,jj)=white; else aa(kk,jj)=black;
end;
    end;
 end; end;
imshow(aa)


%3310 b.2
aa=uint8(255*ones(300,300,3));
aa(:,:,2)=0;
aa(:,:,3)=0;
for kk=1:300,
   for jj=1:300,
     if 300-jj>kk, aa(kk,jj,1)=0; aa(kk,jj,1)=0;
                                  aa(kk,jj,3)=255;
     end;
 end; end;
imshow(aa)


%3310 b.1
aa=uint8(255*ones(300,300));
```

```
for kk=1:300,
    for jj=1:300,
        if 300-jj>kk, aa(kk,jj)=0; end;
 end; end;
imshow(aa)



%3310 a.2
aa=uint8(255*ones(300,300,3));
aa(:,:,2)=0;
aa(:,:,3)=0;
for kk=1:300,
    for jj=1:300,
        if jj>kk, aa(kk,jj,1)=0; aa(kk,jj,1)=0;
aa(kk,jj,3)=255; end;
 end; end;
imshow(aa)


return
%3310 a.1
aa=uint8(255*ones(300,300));
for kk=1:300,
    for jj=1:300,
        if jj>kk, aa(kk,jj)=0; end;
 end; end;
imshow(aa)
```