```python
In [1]: import numpy as np
```

```python
In [2]: ones_arr=np.ones((5,5))
```

```python
In [3]: ones_arr
```

```python
Out[3]: array([[1., 1., 1., 1., 1.],
               [1., 1., 1., 1., 1.],
               [1., 1., 1., 1., 1.],
               [1., 1., 1., 1., 1.],
               [1., 1., 1., 1., 1.]])
```

```python
In [4]: ones_arr=np.ones((5,5),dtype=int)
```

```python
In [5]: ones_arr
```

```python
Out[5]: array([[1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1]])
```

```python
In [6]: zeros_arr=np.zeros((3,3),dtype=int)
```

```python
In [7]: zeros_arr
```

```python
Out[7]: array([[0, 0, 0],
               [0, 0, 0],
               [0, 0, 0]])
```

```python
In [8]: ones_arr
```

```python
Out[8]: array([[1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1],
               [1, 1, 1, 1, 1]])
```

```python
In [9]: ones_arr*255
```

```python
Out[9]: array([[255, 255, 255, 255, 255],
               [255, 255, 255, 255, 255],
               [255, 255, 255, 255, 255],
               [255, 255, 255, 255, 255],
               [255, 255, 255, 255, 255]])
```

```python
In [10]: import matplotlib.pyplot as plt
```

```python
In [11]: %matplotlib inline
```

```python
In [12]: from PIL import Image  #python image library
```

In [13]:
```python
horse_img=Image.open(r'C:\Users\Dell\OneDrive\Desktop\horse.jpeg')
```

In [14]:
```python
horse_img
```

Out[14]:

In [15]:
```python
tiger_img=Image.open(r'C:\Users\Dell\OneDrive\Desktop\ti.jpg')
```

In [16]:
```python
tiger_img
```

Out[16]:

In [17]:
```python
type(horse_img)
```

Out[17]:   PIL.JpegImagePlugin.JpegImageFile

In [18]:
```python
horse_arr=np.asarray(horse_img)
```

In [19]:
```python
horse_arr
```

```
Out[19]: array([[[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [25, 37, 35],
                  [19, 34, 31],
                  [14, 30, 27]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [26, 38, 36],
                  [22, 37, 34],
                  [20, 36, 33]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [28, 40, 38],
                  [25, 40, 37],
                  [24, 40, 37]],

                 ...,

                 [[49, 50, 44],
                  [40, 41, 35],
                  [35, 35, 27],
                  ...,
                  [14, 30, 29],
                  [13, 25, 25],
                  [12, 22, 23]],

                 [[45, 50, 44],
                  [38, 43, 37],
                  [31, 36, 30],
                  ...,
                  [11, 25, 25],
                  [12, 24, 24],
                  [16, 26, 27]],

                 [[31, 41, 33],
                  [31, 41, 33],
                  [32, 39, 32],
                  ...,
                  [14, 26, 26],
                  [16, 26, 27],
                  [23, 31, 33]]], dtype=uint8)
```

```
In [20]: type(horse_arr)
```

```
Out[20]: numpy.ndarray
```

```
In [21]: horse_arr.shape
```

Out[21]: (2334, 3502, 3)

In [22]:
```python
plt.imshow(horse_arr)
plt.show()
```


In [23]:
```python
horse_red=horse_arr.copy()
```

In [24]:
```python
horse_red
```

```
Out[24]:  array([[[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [25, 37, 35],
                  [19, 34, 31],
                  [14, 30, 27]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [26, 38, 36],
                  [22, 37, 34],
                  [20, 36, 33]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [28, 40, 38],
                  [25, 40, 37],
                  [24, 40, 37]],

                 ...,

                 [[49, 50, 44],
                  [40, 41, 35],
                  [35, 35, 27],
                  ...,
                  [14, 30, 29],
                  [13, 25, 25],
                  [12, 22, 23]],

                 [[45, 50, 44],
                  [38, 43, 37],
                  [31, 36, 30],
                  ...,
                  [11, 25, 25],
                  [12, 24, 24],
                  [16, 26, 27]],

                 [[31, 41, 33],
                  [31, 41, 33],
                  [32, 39, 32],
                  ...,
                  [14, 26, 26],
                  [16, 26, 27],
                  [23, 31, 33]]], dtype=uint8)
```

```
In [25]:  horse_arr==horse_red
```

```
Out[25]:  array([[[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]],

                 [[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]],

                 [[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]],

                 ...,

                 [[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]],

                 [[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]],

                 [[ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True],
                  ...,
                  [ True,    True,    True],
                  [ True,    True,    True],
                  [ True,    True,    True]]])
```
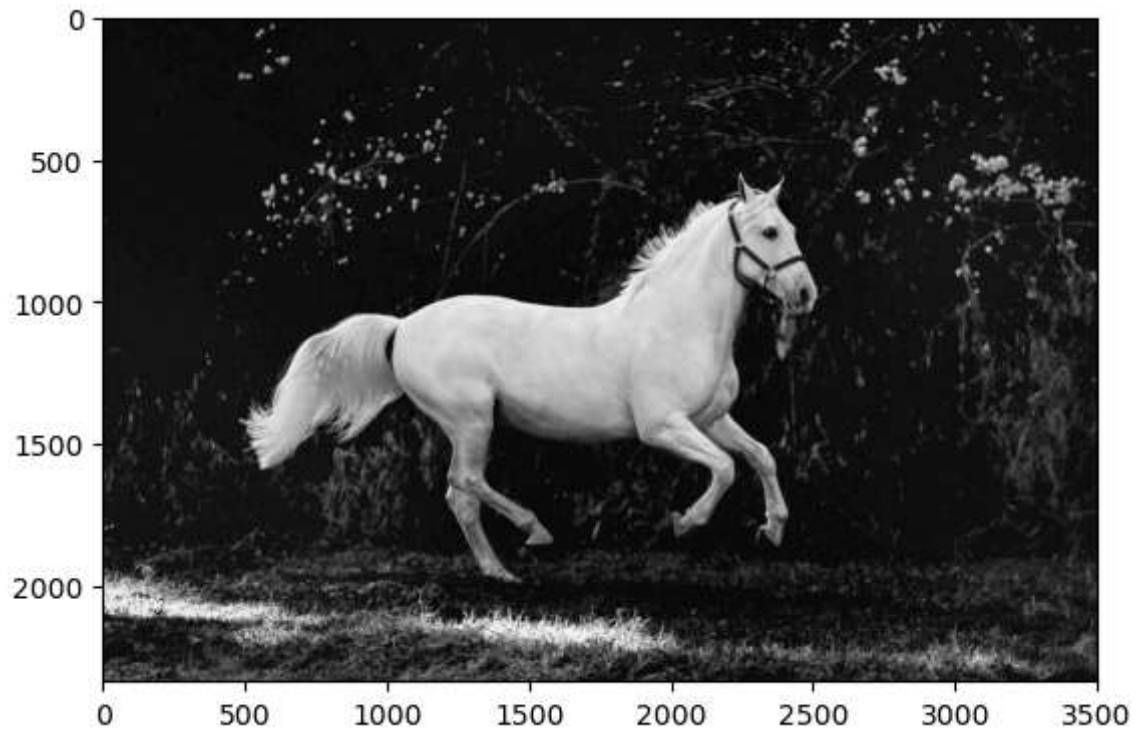
In [26]: `horse_red.shape`

Out[26]: (2334, 3502, 3)

In [27]:
```python
#RGB
plt.imshow(horse_red[:,:,0])
plt.show()
```


In [28]:
```python
horse_red[:,:,0]
```
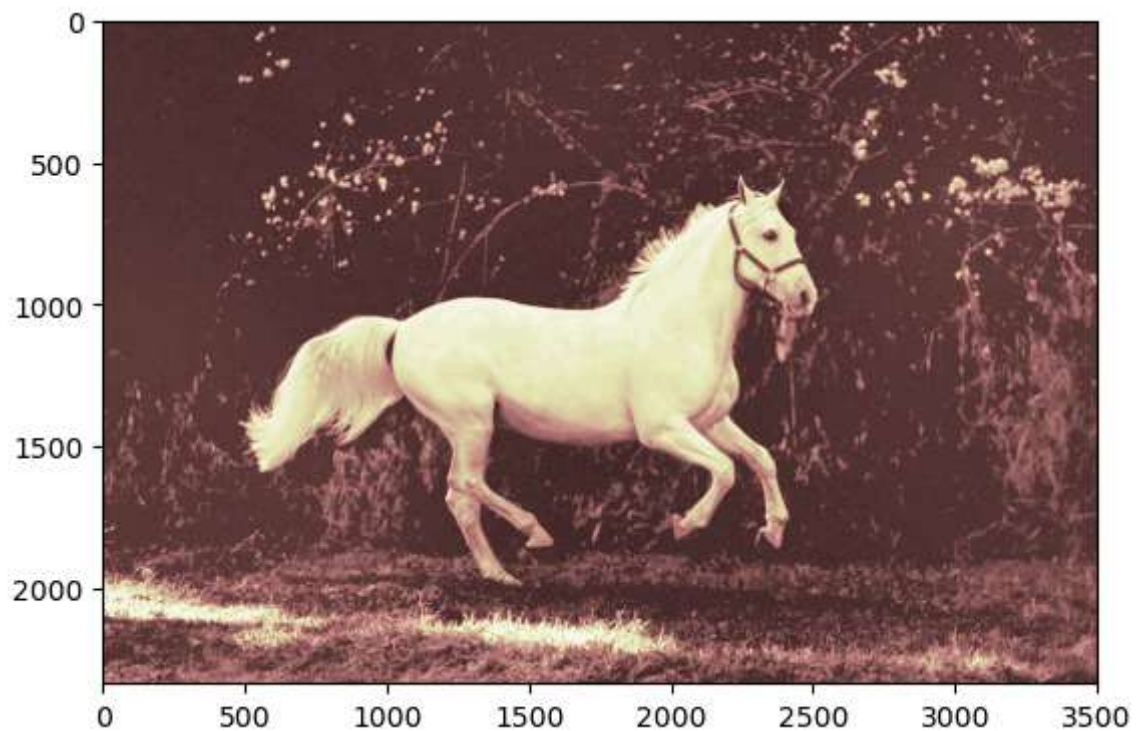
Out[28]:
```
array([[15, 15, 15, ..., 25, 19, 14],
       [15, 15, 15, ..., 26, 22, 20],
       [15, 15, 15, ..., 28, 25, 24],
       ...,
       [49, 40, 35, ..., 14, 13, 12],
       [45, 38, 31, ..., 11, 12, 16],
       [31, 31, 32, ..., 14, 16, 23]], dtype=uint8)
```
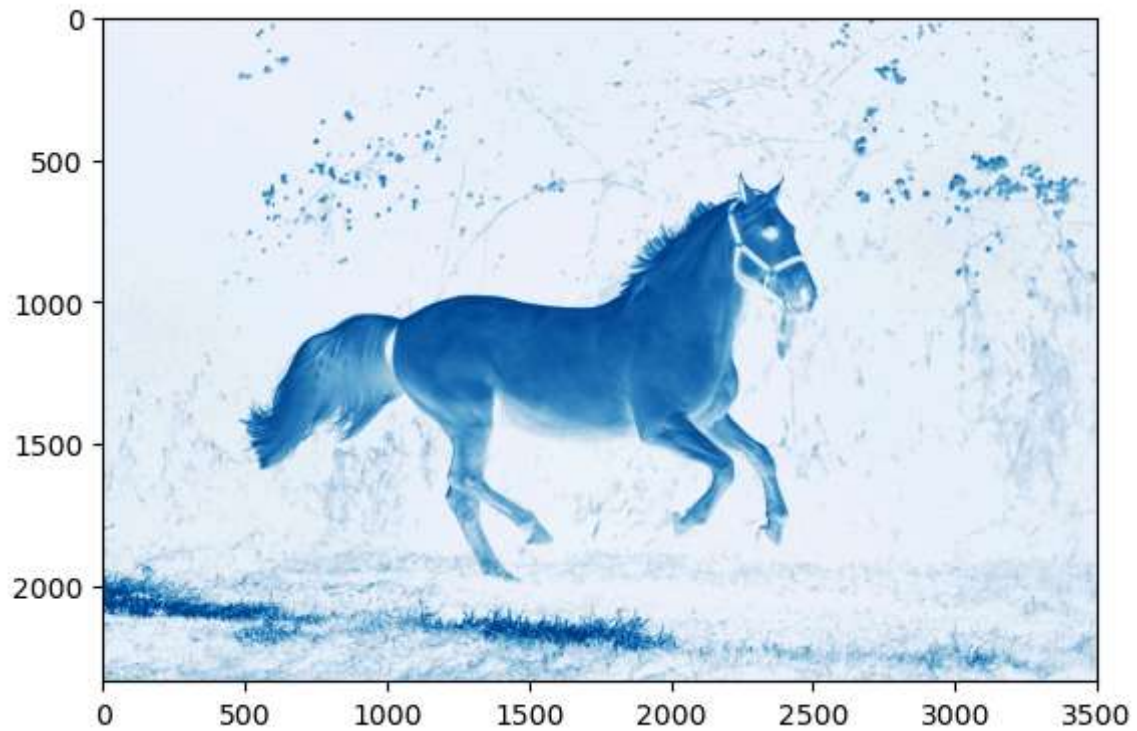
In [29]:
```python
plt.imshow(horse_red[:,:,0],cmap='grey' )
plt.show()
```
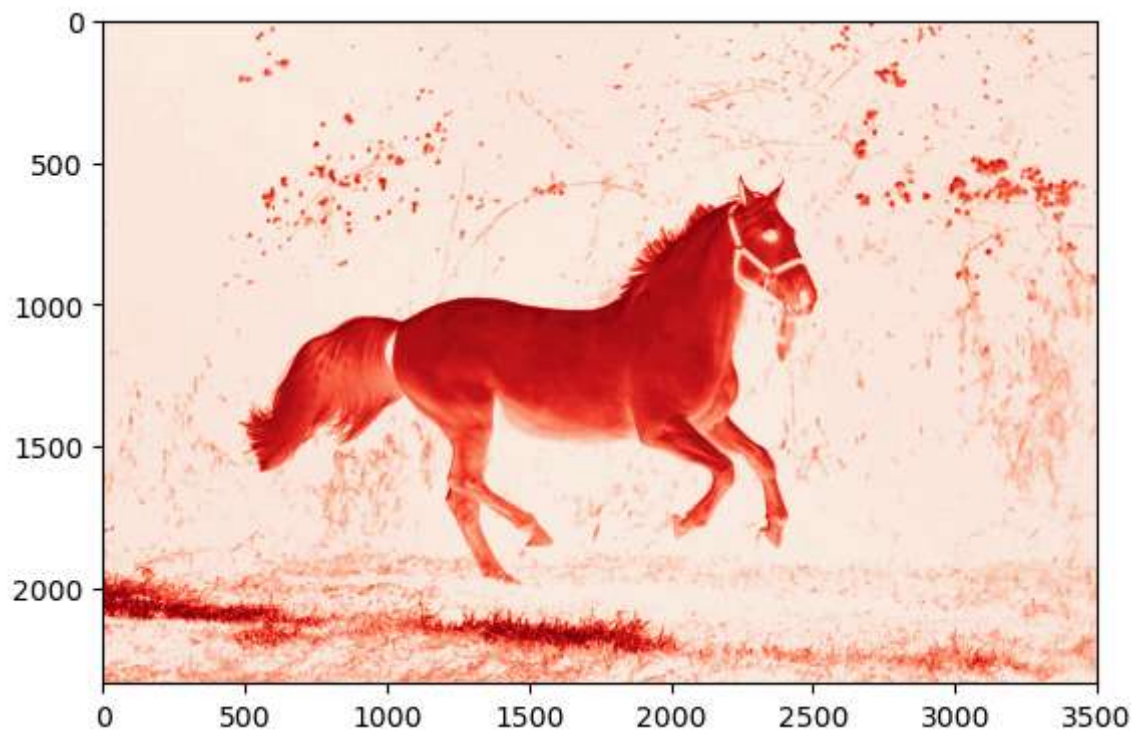
In [30]:
```python
plt.imshow(horse_red[:,:,0],cmap='pink')
plt.show()
```


In [31]:
```python
plt.imshow(horse_red[:,:,0],cmap='Blues')
plt.show()
```

```
In [32]:  plt.imshow(horse_red[:,:,0],cmap='Reds' )
          plt.show()
```
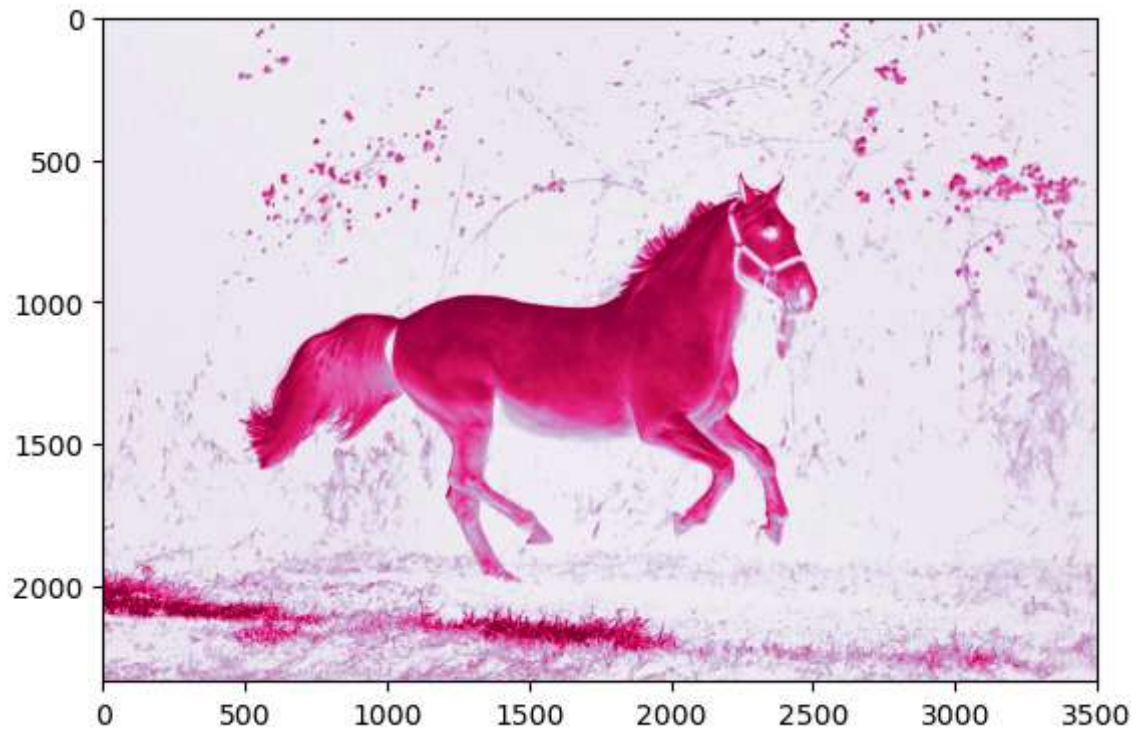


```
In [33]:  plt.imshow(horse_red[:,:,0],cmap='PuBu' )
          plt.show()
```
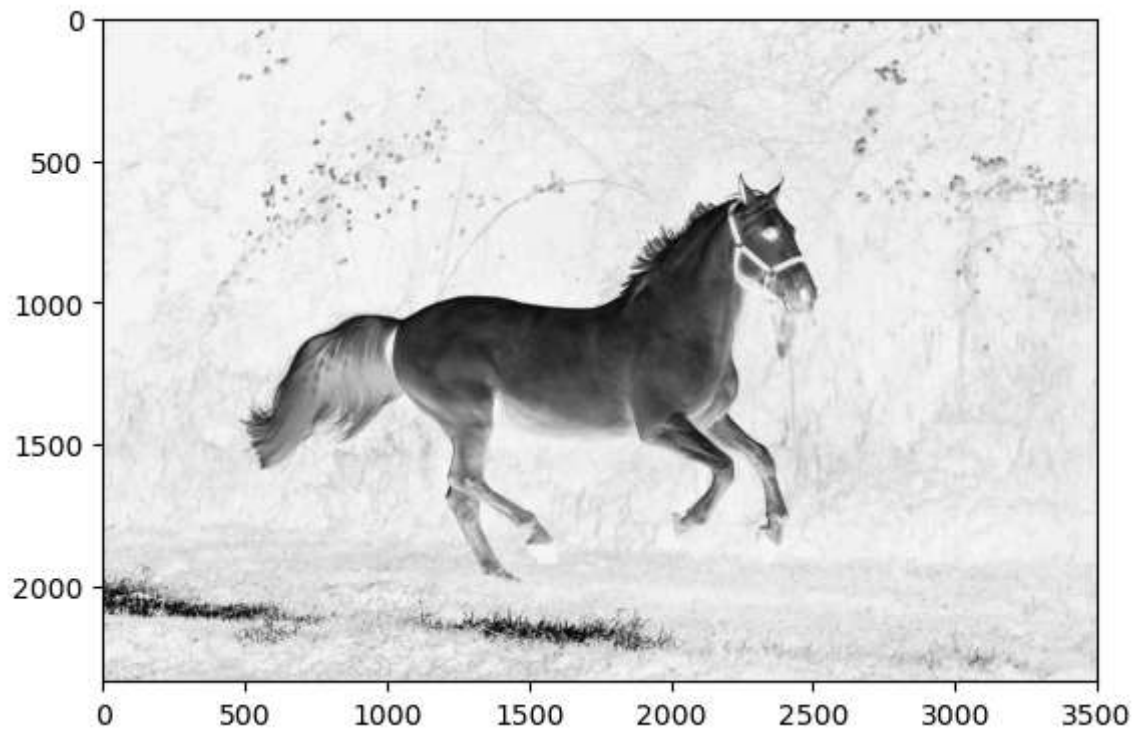
```
In [34]:  plt.imshow(horse_red[:,:,0],cmap='Greens' )
          plt.show()
```


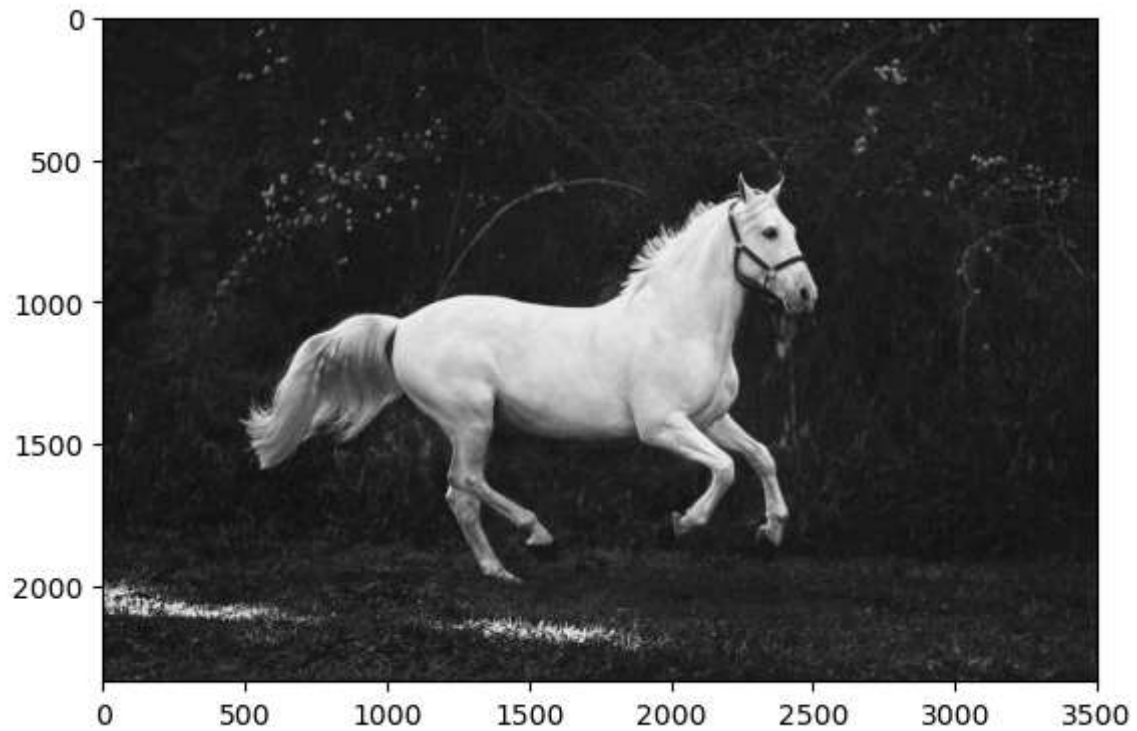```
In [35]: plt.imshow(horse_red[:,:,0],cmap='PuRd')
          plt.show()
```
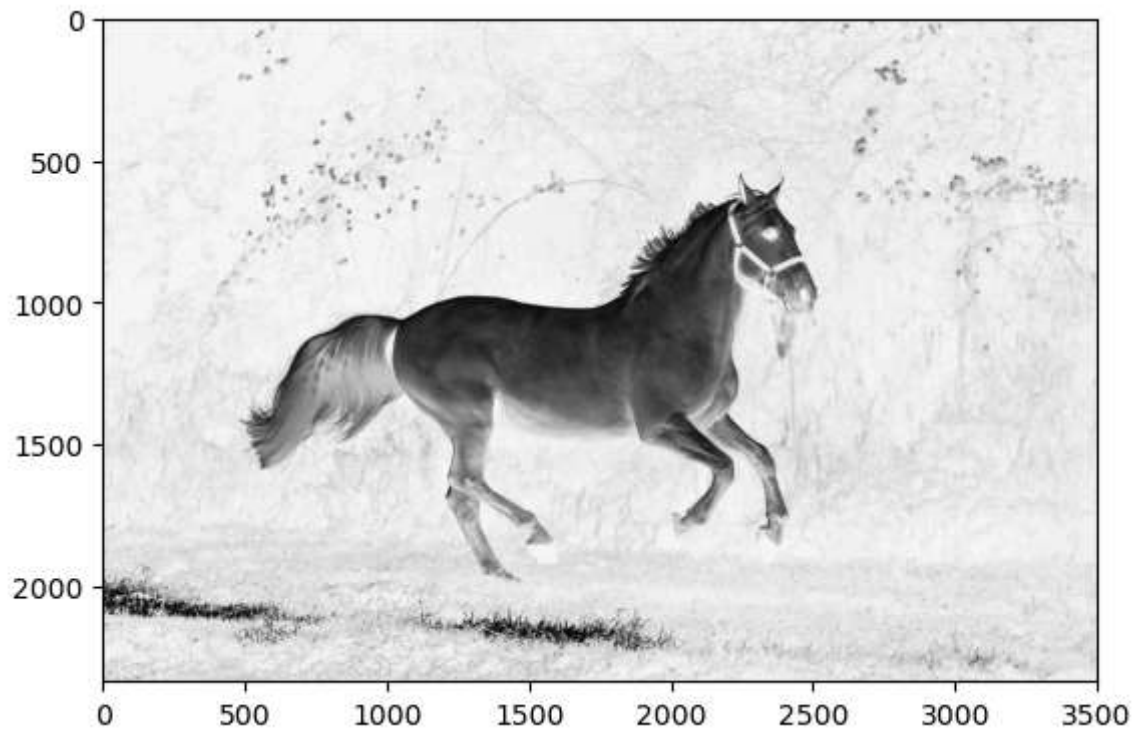
```
In [36]: plt.imshow(horse_red[:,:,1],cmap='Greys')
          plt.show()
```



```
In [37]:  plt.imshow(horse_red[:,:,2],cmap='grey' )
          plt.show()
```

In [38]:
```python
plt.imshow(horse_red[:,:,1],cmap='Greys' )
plt.show()
```


In [39]:
```python
horse_red[:,:,0]
```

```
Out[39]:   array([[15, 15, 15, ..., 25, 19, 14],
                  [15, 15, 15, ..., 26, 22, 20],
                  [15, 15, 15, ..., 28, 25, 24],
                  ...,
                  [49, 40, 35, ..., 14, 13, 12],
                  [45, 38, 31, ..., 11, 12, 16],
                  [31, 31, 32, ..., 14, 16, 23]], dtype=uint8)
```

In [40]: `horse_red[:,:,1]`

```
Out[40]:   array([[17, 17, 17, ..., 37, 34, 30],
                  [17, 17, 17, ..., 38, 37, 36],
                  [17, 17, 17, ..., 40, 40, 40],
                  ...,
                  [50, 41, 35, ..., 30, 25, 22],
                  [50, 43, 36, ..., 25, 24, 26],
                  [41, 41, 39, ..., 26, 26, 31]], dtype=uint8)
```

In [41]: `horse_red[:,:,2]`

```
Out[41]:   array([[29, 29, 29, ..., 35, 31, 27],
                  [29, 29, 29, ..., 36, 34, 33],
                  [29, 29, 29, ..., 38, 37, 37],
                  ...,
                  [44, 35, 27, ..., 29, 25, 23],
                  [44, 37, 30, ..., 25, 24, 27],
                  [33, 33, 32, ..., 26, 27, 33]], dtype=uint8)
```

In [42]: `horse_red[:,:,1]=0`

In [43]: `horse_red[:,:,1]`

```
Out[43]:   array([[0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  ...,
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

In [44]:
```
plt.imshow(horse_red)
plt.show()
```

```
In [45]:   horse_red[:,:,2]
```

```
Out[45]:   array([[29, 29, 29, ..., 35, 31, 27],
                  [29, 29, 29, ..., 36, 34, 33],
                  [29, 29, 29, ..., 38, 37, 37],
                  ...,
                  [44, 35, 27, ..., 29, 25, 23],
                  [44, 37, 30, ..., 25, 24, 27],
                  [33, 33, 32, ..., 26, 27, 33]], dtype=uint8)
```

```
In [46]:   horse_red[:,:,2]=0
```

```
In [47]:   horse_red[:,:,2]
```

```
Out[47]:   array([[0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  ...,
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0],
                  [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

```
In [48]:   plt.imshow(horse_red)
           plt.show()
```

In [49]: horse_arr

```
Out[49]: array([[[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [25, 37, 35],
                  [19, 34, 31],
                  [14, 30, 27]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [26, 38, 36],
                  [22, 37, 34],
                  [20, 36, 33]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [28, 40, 38],
                  [25, 40, 37],
                  [24, 40, 37]],

                 ...,

                 [[49, 50, 44],
                  [40, 41, 35],
                  [35, 35, 27],
                  ...,
                  [14, 30, 29],
                  [13, 25, 25],
                  [12, 22, 23]],

                 [[45, 50, 44],
                  [38, 43, 37],
                  [31, 36, 30],
                  ...,
                  [11, 25, 25],
                  [12, 24, 24],
                  [16, 26, 27]],

                 [[31, 41, 33],
                  [31, 41, 33],
                  [32, 39, 32],
                  ...,
                  [14, 26, 26],
                  [16, 26, 27],
                  [23, 31, 33]]], dtype=uint8)
```

```
In [50]: horse_red
```

```
Out[50]:  array([[[15,   0,   0],
                  [15,   0,   0],
                  [15,   0,   0],
                  ...,
                  [25,   0,   0],
                  [19,   0,   0],
                  [14,   0,   0]],

                 [[15,   0,   0],
                  [15,   0,   0],
                  [15,   0,   0],
                  ...,
                  [26,   0,   0],
                  [22,   0,   0],
                  [20,   0,   0]],

                 [[15,   0,   0],
                  [15,   0,   0],
                  [15,   0,   0],
                  ...,
                  [28,   0,   0],
                  [25,   0,   0],
                  [24,   0,   0]],

                 ...,

                 [[49,   0,   0],
                  [40,   0,   0],
                  [35,   0,   0],
                  ...,
                  [14,   0,   0],
                  [13,   0,   0],
                  [12,   0,   0]],

                 [[45,   0,   0],
                  [38,   0,   0],
                  [31,   0,   0],
                  ...,
                  [11,   0,   0],
                  [12,   0,   0],
                  [16,   0,   0]],

                 [[31,   0,   0],
                  [31,   0,   0],
                  [32,   0,   0],
                  ...,
                  [14,   0,   0],
                  [16,   0,   0],
                  [23,   0,   0]]], dtype=uint8)
```

```
In [51]:  horse_img
```

Out[51]:

In [52]:
```python
arr1=np.asarray(horse_img)
```

In [53]:
```python
arr1
```

```
Out[53]: array([[[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [25, 37, 35],
                  [19, 34, 31],
                  [14, 30, 27]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [26, 38, 36],
                  [22, 37, 34],
                  [20, 36, 33]],

                 [[15, 17, 29],
                  [15, 17, 29],
                  [15, 17, 29],
                  ...,
                  [28, 40, 38],
                  [25, 40, 37],
                  [24, 40, 37]],

                 ...,

                 [[49, 50, 44],
                  [40, 41, 35],
                  [35, 35, 27],
                  ...,
                  [14, 30, 29],
                  [13, 25, 25],
                  [12, 22, 23]],

                 [[45, 50, 44],
                  [38, 43, 37],
                  [31, 36, 30],
                  ...,
                  [11, 25, 25],
                  [12, 24, 24],
                  [16, 26, 27]],

                 [[31, 41, 33],
                  [31, 41, 33],
                  [32, 39, 32],
                  ...,
                  [14, 26, 26],
                  [16, 26, 27],
                  [23, 31, 33]]], dtype=uint8)
```

```
In [54]: type(arr1)
```

```
Out[54]: numpy.ndarray
```

```
In [55]: arr1.shape
```

Out[55]:   (2334, 3502, 3)

In [56]:
```python
plt.imshow(arr1)
plt.show()
```


In [57]:
```python
horse_img1=arr1.copy()
```

In [59]:
```python
horse_img1[:,:,0]=0
```

In [60]:
```python
horse_img1[:,:,0]
```

Out[60]:
```
array([[0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       ...,
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

In [63]:
```python
plt.imshow(horse_img1)
plt.show()
```

```
In [64]:  horse_img1[:,:,1]=0
```

```
In [65]:  horse_img1[:,:,1]
```

```
Out[65]:  array([[0, 0, 0, ..., 0, 0, 0],
                 [0, 0, 0, ..., 0, 0, 0],
                 [0, 0, 0, ..., 0, 0, 0],
                 ...,
                 [0, 0, 0, ..., 0, 0, 0],
                 [0, 0, 0, ..., 0, 0, 0],
                 [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

```
In [67]:  plt.imshow(horse_img1)
          plt.show()
```