```matlab
 1 clc;
 2
 3 t = 0:0.01:8;
 4
 5 fig1 = figure ("Name","Step Response of Y(s)/R(s) for↙
Different k",'Position',[100 350 900 500]);
 6 hold all
 7 grid on
 8 grid minor
 9
10 stepp = 0.1;
11 max = 3;
12 min = 1;
13
14 k = max:-stepp:min;
15 for i = 1:((max - min)/stepp)
16     h_s = tf(3*k(i), [1 2 3*k(i)]);
17     [yh_s, xh_s] = step(h_s,t);
18     % r = 0.9290 + k/3;
19     % g = 0.6940 + k/3;
20     % b = 0.1250 + k/3;
21     r = k(i)/3 - k(i)/(3*1);
22     g = k(i)/3 - k(i)/(3*3);
23     b = k(i)/3 - k(i)/(3*4);
24     c = hsv(ceil(((max-min)/stepp)*3));
25     color  = sprintf("[%f %f %f]", r, g, b);
26     color = c(i*2,:);
27     if k(i) == min || k(i) == max
28         plot (xh_s, yh_s ,'LineWidth',1,'Color',color)
29     else
30         plot (xh_s, yh_s ,'LineWidth',1,'Color',color,↙
'HandleVisibility','off')
31     end
32 end
33 plot (xh_s, yh_s ,'LineWidth',1,'Color',color)
```

```matlab
34 title ("Step Response of Y(s)/R(s) for Different k");
35 subtitle("Almog Dobrescu 214254252")
36 ylabel("y(t)")
37 xlabel("t [sec]")
38 grid on
39 grid minor
40 legend({sprintf("k = %g", max), sprintf("k = %g",↙
min)},'FontSize',11 ,'Location','northeast')
41 %exportgraphics(fig1, '2.4grap1.png','Resolution',1200);
42
43
```