(C) When the phase between $s(t-t_1)$ and $s(t-t_2)$ is $\pm(2k+1)\pi$, $r(t)=0$

(b) since t_1, t_2 is the time shift, so when

$t_1 - t_2 = \pm \frac{T}{2} k$ (k,odd) the phase shift of $s(t-t_1)$ and $s(t-t_2)$ have $\pm\pi$ difference, where T is the period of $r(t)$ and $s(t)$.

$$\therefore \frac{\sqrt{x^2+10^6} - \sqrt{(x-55)^2+10^6} + 55}{3\times 10^8} = \pm \frac{T}{2} k \quad (k = 1, 3, 5 \ldots)$$

all the x satisfy the above formula, the corresponding positions' signal strength is zero.

(d) Clear all;
K=0;
for x=100:0.01:100
d1=(x^2+10^6)^(1/2);
d2=((x-55)^2+10^6)^(1/2)+55;
d=abs(d1-d2)/pi
if abs(mod(d,2)-1)<=0.0001
rs1(k+1)=x;
k=k+1;
end
end

According to the result of (C) we can write the matlab program as:

After run, the x that can make the signal strength equal to 0 are:

$x = -58.12$, -6.48, ± 6.49