1. (10) Give a bound on the backward error in approximating the two solutions to the equation $x^2 + 15x + 55.948 = 0$ by $x_1 = -\frac{7}{5}$ and $x_2 = -8$. 
2. (10) Consider the following MATLAB code fragment:

```matlab
x = 1;
delta = 1 / 2^(50);
for j1=1:20
    x = x + delta;
    delta = delta / 2;
end
```

Use your knowledge of double-precision floating-point arithmetic (53 bit mantissa, with exponents in the range \([-1022, 1023]\)) to predict what the final values for `x` and `delta` will be. Briefly explain your prediction.