

HW4

Due: 4/5 11:59 AM

Problem 1. As Fig. 6.27 shown, if (x_1, y_1) and (x_2, y_2) are points on one of the slanted sides of the trapezoid, then finding the equation of line through them and substituting $x = 0$ and $x = r$ to conduct the values of a and b :

$$a = y_1 - x_1 \frac{y_2 - y_1}{x_2 - x_1}, \quad b = y_1 + (r - x_1) \frac{y_2 - y_1}{x_2 - x_1}.$$

Problem 2. By hand, enlarge the list

1 4 7 4 3 6

to lengths (a) 9; (b) 11; (c) 2 by

(a) nearest neighbor interpolation

(b) linear interpolation

Problem 3. By hand, compute the DFT of each of the following sequences:

(a) [2, 3, 4, 5]

(b) [2, -3, 4, -5]

(c) [-9, -8, -7, -6]

(d) [-9, 8, -7, 6]