

Name: _____

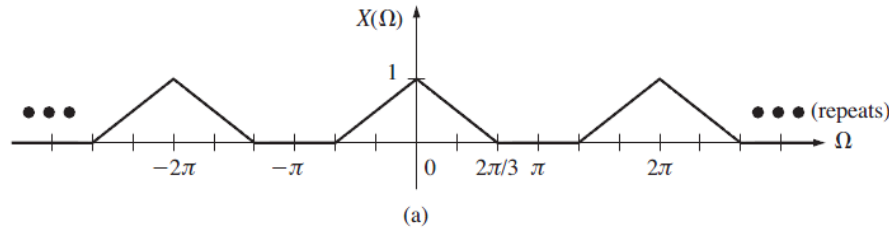
Problem	Points	Score
4.4(a)	20	
4.6(c)	20	
5.45(a)	20	
5.45(b)	20	
6.28(a)	20	
Total	100	

Notes:

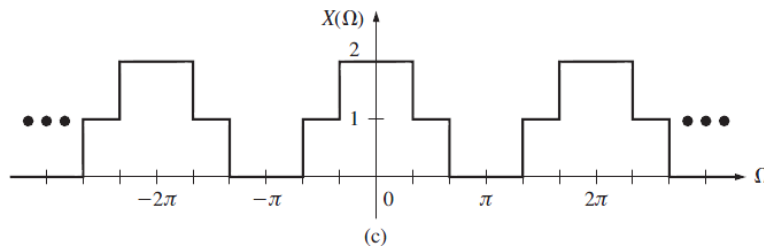
- (1) The exam is closed books and notes except for one double-sided sheet of notes.
- (2) Please indicate clearly your answer to the problem.
- (3) The details of your solutions are more important than the answers. Please explain your solutions clearly and include as many details as possible.

4.6. Use the properties of the DTFT to compute the inverse DFT of the following frequency response functions:

(a)



(c)



5.45. Consider the discrete-time system given by the input/output difference equation:

$$y[n+1] + 0.9y[n] = 1.9x[n+1]$$

(a) Show that the impulse response is given by $h[n] = 1.9(-0.9)^n u[n]$.

(b) Compute the output response $y[n]$ to an input of $x[n] = 1 + \sin(\pi n/4) + \sin(\pi n/2)$.

6.28(a). Using the s-domain representation, compute the transfer function for the system shown:

