

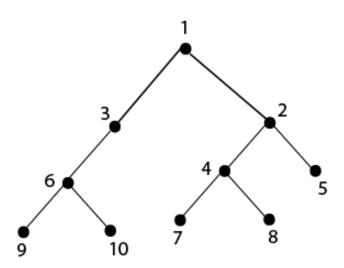
MATH 3330: Applied Graph Theory

ASSIGNMENT #5

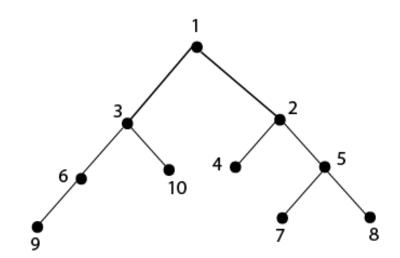
Due Tues. Mar. 2

1. For the following, find the i) pre-order, ii) post-order and iii) in-order traversals of the given binary tree.

a)



b)

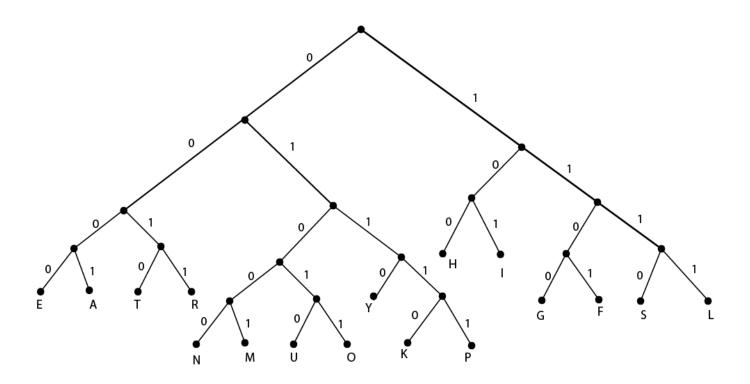


2. For the following, i) represent the arithmetic expression by an expression tree, then give the ii) prefix, iii) postfix and iv) infix notations for the arithmetic expression by performing the pre-order, post-order and inorder traversals, respectively, of the expression tree.

a)
$$((a + (b \times c)) - d) / g$$

b) $(((a + b) \times c) - (d + e)) \times (((a + (b \times c)) - d) / g)$

3. Use the given Huffman tree to decode the following strings



- b) 0100100010010101011111011010101000

- 4. For the given list of symbols and weights,
 - i) construct a Huffman code using left-to-right ordering to break ties,
 - ii) calculate its average weighted length,
 - iii) encode "DEFACED" and
 - iv) encode "BAGGAGE".

a)				_			_	_	
	Letter	A	В	C	D	Е	F	G	Н
	frequency	.1	.15	.2	.17	.13	.15	.05	.05

b)									
	Letter	A	В	C	D	Е	F	G	Н
	frequency	.15	.1	.15	.12	.08	.25	.05	.1

5. Us the Huffman algorithm to construct a prefix code so that the following line is encoded using the shortest possible bitstring. Disregard the blank when encoding.

SILLY SALLY ANNE