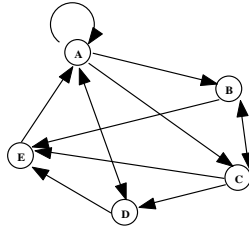


Senior Division

1. Graph Theory

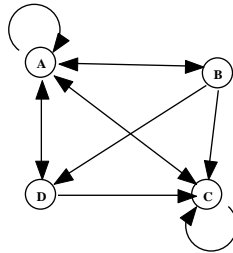
How many path of length 2 exist in the directed graph at the right?



1.

2. Graph Theory

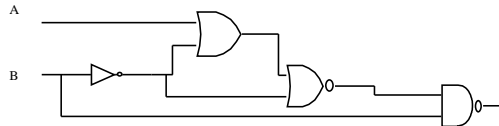
How many cycles starting at vertex A are there in the directed graph at the



2.

3. Digital Electronics

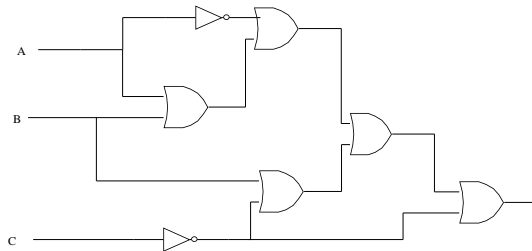
Which ordered pairs make the circuit FALSE?



3.

4. Digital Electronics

Simplify the Boolean expression represented by the digital circuit.



4.

5. Assembly Language

What is printed after this program is executed?

	C	DC	2		PART	PRINT	C
	N	DC	288			LOAD	N
TOP	LOAD		N			SUB	C
	DIV		C			BE	STOP
	MULT		C			LOAD	N
	STORE		X			DIV	C
	LOAD		N			STORE	N
	SUB		X			BU	TOP
	BE		PART			STOP	END
	LOAD		C				
	ADD		= 1				
	STORE		C				
	BU		TOP				

5.