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Question 1 :

Suppose that A is an algorithm to find the independent set of a 3-colorable graph of size $O(n/\Delta^{1/3})$. Give an algorithm to color a graph with $\tilde{O}(n^{0.25})$ colors. (You can use the algorithms taught in the class by mentioning their names).

Why does your algorithm use $\tilde{O}(n^{0.25})$ colors, and not $O(n^{0.25})$ colors ?

Question 2 :

Exersice 1 from *ex4.pdf*.

Question 3 :

Exercise 1 from *hw3.pdf*.

Question 4 :

Exercise 2 from *hw3.pdf*.

Question 5 :

Exercise 1 from *ex5.pdf* .

Question 6 :

Exercise 2 from *ex5.pdf* .

Question 7 :

Exercise 1 from *hw4.pdf* .