

(lect 1)

Quiz 1

Set - definition

Open book - open note btwn Internet - collaborative quiz

Peer / self graded.

duration: 5 minutes

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Collect afterward and give 1 point to everybody who tried their best.

Question:

Consider the small keyboard shown on the screen:

logfl.org / custom / resources\_ftp / client\_ftp / ks2 / music / piano / index.htm

(alt. www.playpiano.org , but mistake A4 → A3)

Write the set of all frequencies that can be played using this keyboard.

- Hints:
- $f = 440 \text{ Hz}$  is the middle A (A4)
  - $\frac{f_{i+1}}{f_i} = 2^{\frac{1}{12}}$ ,  $\forall$  consecutive  $f_i, f_{i+1}$

Answer:  $\left\{ 440 \cdot 2^{\frac{n}{12}} \mid -9 \leq n \leq 8 \right\}$   
 or  $\left\{ 440 \cdot 2^{\frac{n}{12}} \right\}_{n=-9}^8$

Grading Key: total 10 pts.

1 pt for presentation / clarity.)

take off case ab scratch.

- 4 pts if curly brackets are missing.
- 1 pt if  $n = -10$  or  $n = -8$  instead of  $n = -9$
- 1 pt if  $n = 7$  or  $n = 9$  instead of  $n = 8$
- 4 pts if only rounded numbers are listed. (need formula)