Test 2, Practice/Review

Recall that a relation R is reflexive if for any a, aRa. R is symmetric if for any a, b, aRb implies that bRa. R is transitive if for any a, b, c, aRb and bRc imply that aRc.

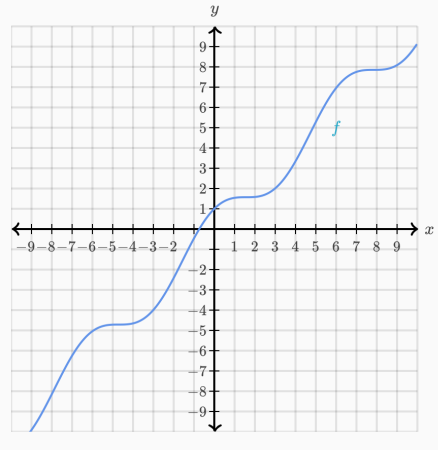
1. Let aRb mean that a and b are cousins. Give an example to show that R is NOT transitive.

2. Let aRb mean that for notes a and b, a has a lower frequency than b. Is R reflexive, symmetric, transitive, or none of the above?

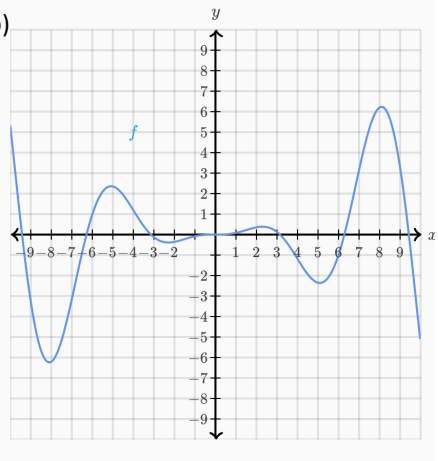
3. (20 points). Consider the function $f(x) = 4x$. Is $f()$ an even function, odd function, or neither? Justify your answer.

4 (20 points). a) Is the function in graph a) even, odd or neither? b) is the function in graph b) even, odd, or neither?

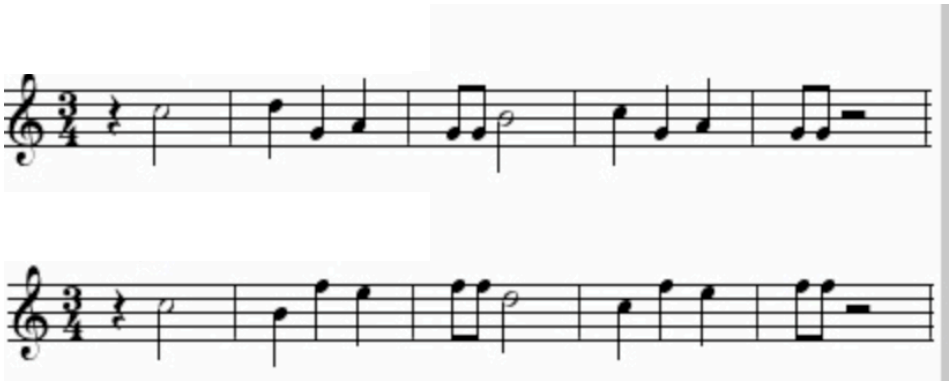
a)



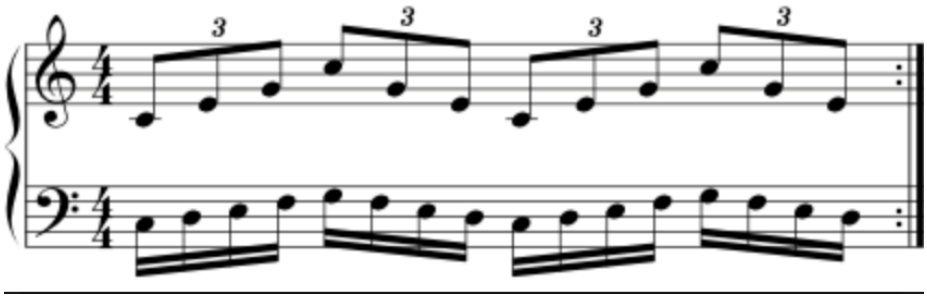
b)



5. How does the melody on the bottom relate to the melody on the top in terms of retrograde, inversion, and retrograde-inversion?



6. Is the polyrhythm in following music best described as 3 against 2? or 4 against 3?



7. Suppose a frequency of 262 Hz is used for middle C. The D above middle C is two-half steps above middle C. If an interval of two half steps increases the frequency by approximately 9/8, what is the approximate frequency of this D?