

MAT 120 Quiz 4 Answer Sheet

Fall 2023

Quiz ID: LRP

Name: \_\_\_\_\_

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Submit electronic answers at

<http://azrael.digipen.edu/cgi-bin/MAT120quiz.pl>

## MAT 120

## Quiz 4

Fall 2023

1. Which of the following are true identities?

i)  $\sin(-x) = \sin(x)$       ii)  $\cos(-x) = \cos(x)$       iii)  $\sin(-x) = -\cos(x)$   
a) i) only      b) iii) only      c) ii) only      d) i) and ii) only      e) ii) and iii) only

2. Which of the following are true identities?

i)  $\sin(x - \frac{\pi}{2}) = \cos(x)$       ii)  $\cos(x - \frac{\pi}{2}) = \sin(x)$       iii)  $\sin(x - \frac{\pi}{2}) = -\cos(x)$   
a) i) only      b) iii) only      c) ii) only      d) i) and ii) only      e) ii) and iii) only

3. If a harmonic seventh chord is played with the four fundamental frequencies 400, 500, 600, and 700 Hz, then what is the smallest number of beats that can occur between any two harmonic partials of these four harmonic tones?

a) 120      b) 20      c) 50      d) 75      e) 100

4. Same question for the four fundamental frequencies 400, 500, 600, and 720 Hz.

a) 120      b) 20      c) 50      d) 75      e) 100

5. In the previous two problems the highest and lowest notes of the chord are a minor seventh apart. What is the cent value difference between these two minor sevenths to the nearest 5 cents?

a) 15      b) 25      c) 10      d) 50      e) 35

