

MAT 120

Quiz 3

Fall 2020

1. Find $\cos(3\pi/4)$:

- a) 0 b) $-\frac{\sqrt{2}}{2}$ c) $\frac{\sqrt{2}}{2}$ d) $\frac{\sqrt{3}}{2}$ e) $-\frac{\sqrt{3}}{2}$

Correct Answer: $-\frac{\sqrt{2}}{2}$ 2. Find $\sin(7\pi/3)$:

- a) 0 b) $\frac{\sqrt{2}}{2}$ c) $\frac{\sqrt{3}}{2}$ d) $-\frac{\sqrt{2}}{2}$ e) $-\frac{\sqrt{3}}{2}$

Correct Answer: $\frac{\sqrt{3}}{2}$ 3. Find $\cos(3\pi/2)$:

- a) 0 b) $\frac{\sqrt{2}}{2}$ c) $\frac{\sqrt{3}}{2}$ d) $-\frac{\sqrt{2}}{2}$ e) $-\frac{\sqrt{3}}{2}$

Correct Answer: 0

4. Find $\cos(5\pi/3)$:

- a) 0 b) $\frac{\sqrt{2}}{2}$ c) $\frac{\sqrt{3}}{2}$ d) $-\frac{\sqrt{2}}{2}$ e) $\frac{1}{2}$

Correct Answer: $\frac{1}{2}$ 5. Find $\sin^2(7\pi/4) + \cos^2(7\pi/4)$:

- a) 1 b) 0 c) $\frac{\sqrt{2}}{2}$ d) $\frac{\sqrt{3}}{2}$ e) $-\frac{\sqrt{3}}{2}$

Correct Answer: 1

6. What is the period of the function: $\sin(8\pi t)$?

- a) 4 b) 5 c) 0.2 d) 0.25 e) 1

Correct Answer: 0.25

7. What is the cent value of a perfect fifth which is one quarter Syntonic comma flat to a Just perfect fifth?

- a) 698 b) 692.5 c) 702 d) 696.5 e) 695

Correct Answer: 696.5

8. Let PC be the interval of one Pythagorean comma, and SC be the interval of one Syntonic comma. What is the difference in cents between two notes which are 1) one PC above middle C, and 2) one SC above middle C?

- a) 1 b) 5 c) 4 d) 3 e) 2

Correct Answer: 2

9. Let $f(t)$ be the ADSR envelope function which connects the points: $(0, 0)$, $(30, 1)$, $(50, 0.6)$, $(200, 0.6)$, and $(500, 0)$, where time t is measured in milliseconds. What is the slope of the Decay phase?

- a) $-1/25$ b) $1/50$ c) $-1/50$ d) $1/25$ e) $-1/40$

Correct Answer: $-1/50$

10. Same ADSR envelope function as in the previous question. If the total time of the envelope is shortened by moving the last point to the left, what should the time value of the last point be so that the slope of the Release phase is the same as the slope of the Decay phase?

- a) 225 b) 250 c) 230 d) 235 e) 240

Correct Answer: 230