Name: _____

Instructor: _____

Math 10560, Practice for Quiz 1
August 22, 2023

- The Honor Code is in effect for this quiz. All work is to be your own.
- No calculators.
- The quiz lasts for 25 Minutes .
- Be sure that your name is on every page in case pages become detached.
- Be sure that you have all 6 pages of the test.

PLEASE MARK YOUR ANSWERS WITH AN X, not a circle!

1.	(a)	(b)	(c)	(d)	(e)
2.	(a)	(b)	(c)	(d)	(e)
3.	(a)	(b)	(c)	(d)	(e)
4.	(a)	(b)	(c)	(d)	(e)
5.	(a)	(b)	(c)	(d)	(e)

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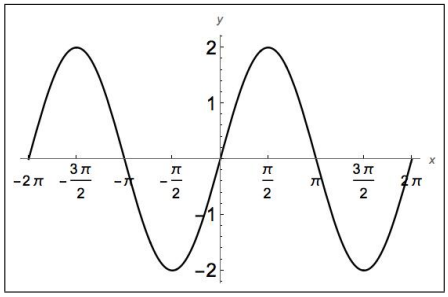
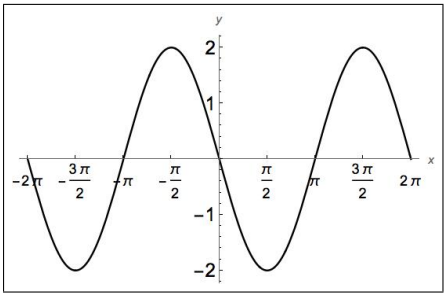
Multiple Choice

1.(2 pts) If $f(x) = \cos(x)$ and $g(x) = x - \dfrac{\pi}{2}$, which of the following is the graph of $y = 2f(g(x))$?
(Make sure you look carefully at the labels on both axes.)

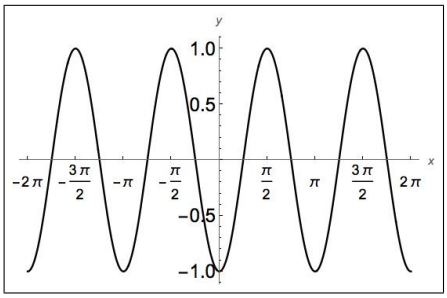
(a)



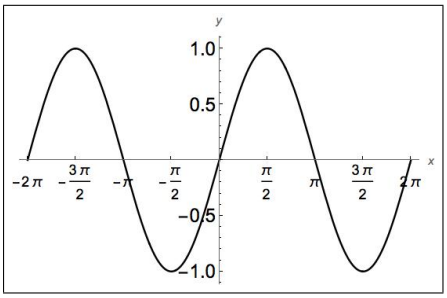
(b)



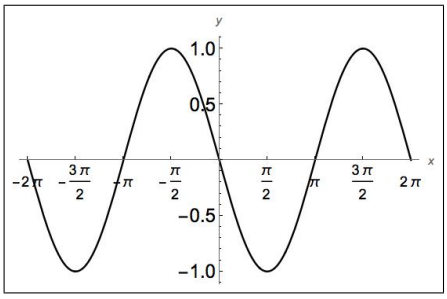
(c)



(d)



(e)



2.(2 pts) What is the value of

$$\cos\left(\frac{7\pi}{6}\right)$$

(a) $\dfrac{\sqrt{3}}{2}$ (b) $\dfrac{1}{2}$ (c) $-\dfrac{1}{2}$ (d) $-\dfrac{\sqrt{3}}{2}$ (e) $-\dfrac{1}{\sqrt{3}}$

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3.(2 pts) Let $f(x) = \dfrac{1}{x-2}$ and $g(x) = \dfrac{1}{x-3}$. What is the domain of the function $f \circ g(x)$?

(a) $\{x | x \neq 3\} = (-\infty, 3) \cup (3, \infty)$

(b) $\{x | x \neq 2\} = (-\infty, 2) \cup (2, \infty)$

(c) $\{x | x \neq 3 \text{ and } x \neq 7/2\} = (-\infty, 3) \cup (3, 7/2) \cup (7/2, \infty)$

(d) $\{x | x \neq 3 \text{ and } x \neq 2\} = (-\infty, 2) \cup (2, 3) \cup (3, \infty)$

(e) $\{\text{all values of } x\} = (-\infty, \infty)$

4.(2 pts) The following table shows the position, $s(t)$, at time t, of a particle moving on an axis, where t is measured in seconds and distance is measured in feet.

t	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1
$s(t)$	1	-3	1	0	1	-1	-4	4	3	2	1	0

Which of the following is the most reasonable estimate of the velocity of the particle, $v(t)$, at time $t = 1$ second given the data available?

(a) $v(1) \approx -10$ ft/sec (b) $v(1) \approx 1$ ft/sec (c) $v(1) \approx 10$ ft/sec

(d) $v(1) \approx 100$ ft/sec (e) $v(1) \approx -1$ ft/sec

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5.(2 pts) The height of a particle moving along a vertical axis is given by $H(t) = \sin\left(\frac{\pi t}{6}\right)$ feet, where t is measured in seconds. What is the average speed of the particle in the first 2 seconds i.e. over the time interval $0 \leq t \leq 2$.

(a) $\frac{1}{4}$ ft/sec (b) $\frac{1}{2\sqrt{2}}$ ft/sec (c) $\frac{\sqrt{3}}{2}$ ft/sec

(d) $\frac{\sqrt{3}}{4}$ ft/sec (e) $\frac{\sqrt{1}}{2}$ ft/sec

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