Online Homework System

Assignment Worksheet
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Name: _____ **Class:** MAT1320 - Fall 2015
Class #: _____ **Section #:** _____
Instructor: Benoit Dionne **Assignment:** Assignment 1 (Fall 2015)

Question 1: (1 point)

Let

$$g(t) = \frac{\sqrt{t-2}}{\sqrt{6-t}}$$

What is the domain of g ? It is the set of all t such that:

(a) $2 < t < 6$

(b) $2 \leq t < 6$

(c) $t \neq 6$

(d) $t \geq 2$

(e) None of the given answers are correct.

(f) $2 \leq t \leq 6$

Question 2: (1 point)

Let $f(x) = -x|x|^7$. Is f an even function, an odd function, or neither even nor odd?

(a) Odd

(b) Neither even nor odd

(c) Even

Question 3: (1 point)

Using your knowledge of trigonometric identities, find the exact value of $\cos(x+y)$ knowing that x and y are between 0 and $\frac{\pi}{2}$, that $\cos(x) = \frac{3}{5}$ and that $\sec(y) = \frac{25}{24}$. Your answer must be a rational number, written in the form of an irreducible fraction $p \,/\, q$ (such as $2 \,/\, 3$, $4 \,/\, 5$, $-1 \,/\, 4$, etc.), with $q > 0$. Give the integers p and q .

$p =$ _____ , $q =$ _____

Question 4: (1 point)

Find the values of x in the interval $[0, 2\pi / 9]$ such that $2\sin(9x) - 1 = 0$. If there is more than one value, list them all, separating each one by a semi-colon (;).

Question 5: (1 point)

Give the value of x for which

$$\ln(x) + \ln(x+3) = \ln(2)$$

Give an answer precise to three decimal places.
$x =$ _____

Question 6: (1 point)

Use the table of values below to evaluate each of the following expressions.

x	1	2	7	8	0	-3
$f(x)$	7	8	13	14	6	3
$g(x)$	0	-3	-48	-63	1	-8

$(f \circ f)(1) =$ _____
$(f \circ g)(2) =$ _____
$(g \circ f)(2) =$ _____
$(g \circ g)(1) =$ _____

Question 7: (1 point)

Find the inverse function f^{-1} of the function

$$f(x) = \frac{4x+5}{2x+3}$$

$f^{-1}(x) =$ _____

Question 8: (1 point)

A book is thrown into the air on the planet Calculus and its height in metres at time t in seconds is given by the equation

$$y = 4t - 1.9t^2 \ .$$

In the following, please ensure that your answer is accurate to 3 decimal places.

(a) Find the average velocity V of the book between time $t = 1$ and $t = 1.1$ seconds.
$V =$ _____ m/s.

(b) Find the average velocity V of the book between time $t = 1$ and $t = 1.01$ seconds.
$V =$ _____ m/s.

(c) Find the average velocity V of the book between time $t = 1$ and $t = 1.001$ seconds.
$V =$ _____ m/s.

(d) Deduce the value of the instantaneous velocity V of the book at time $t = 1$ seconds.
$V =$ _____ m/s.