Online Homework System

Assignment Worksheet
5/9/11 - 10:41 AM

Name: _____ **Class:** IFP entrance testing (GK)
Class #: _____ **Section #:** _____
Instructor: George Kinnear **Assignment:** Sample Test

Question 1: (1 point)

The equation of a line is $2y = ax - 4$ where $a \neq 0$ is a constant.

Given that the line has a gradient of $\frac{-9}{2}$, what is the value of a?

Question 2: (1 point)

Consider the quadratic equation $6x^2 - 3x - 5 = 0$.

(a) Find its discriminant.

(b) Decide whether the equation has

(a) two distinct real roots

(b) no real roots

(c) a repeated root

Question 3: (1 point)

Which of the following equations are true for all values of x?

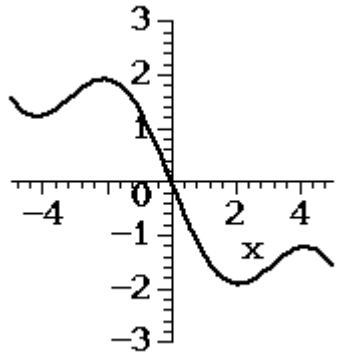
(a) $\cos(-x) = -\cos(x)$

(b) $\tan\left(x + \frac{1}{2}\pi\right) = \tan(x)$

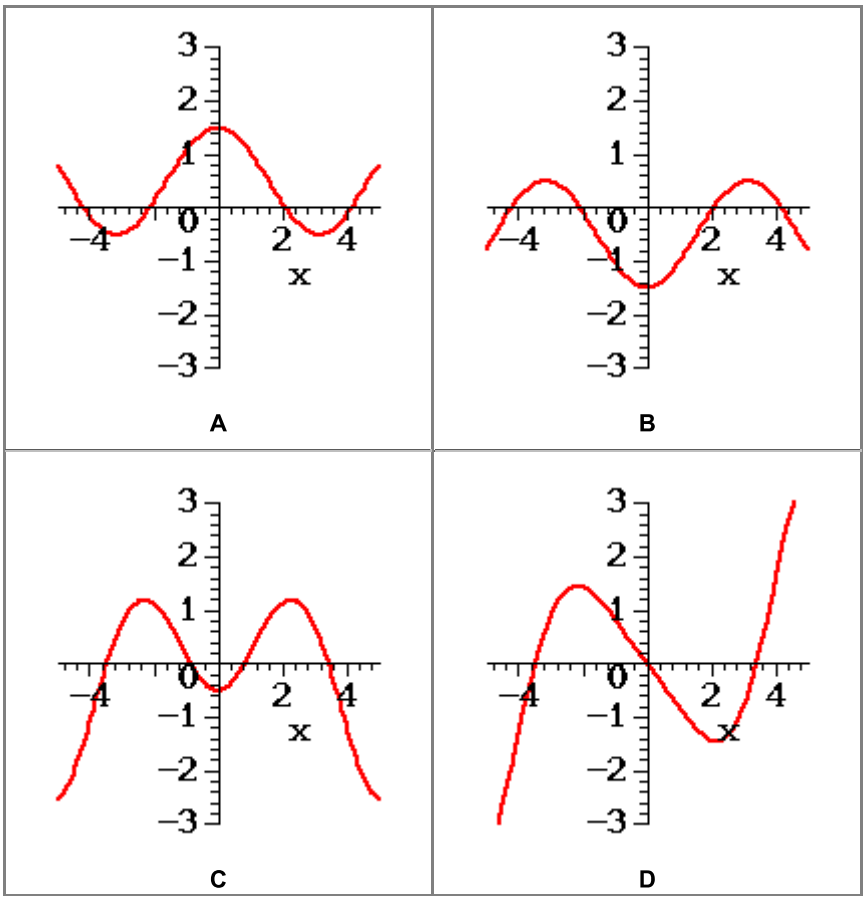
(c) $\sin\left(x + \frac{1}{2}\pi\right) = \cos(x)$

(d) $\sin(x + \pi) = -\sin(x)$

Question 4: (1 point)



The plot above shows the graph of a function $f(x)$. Which of the the four graphs below is the graph of the derivative $f'(x)$?



(a) Graph A

(b) Graph D

(c) Graph B

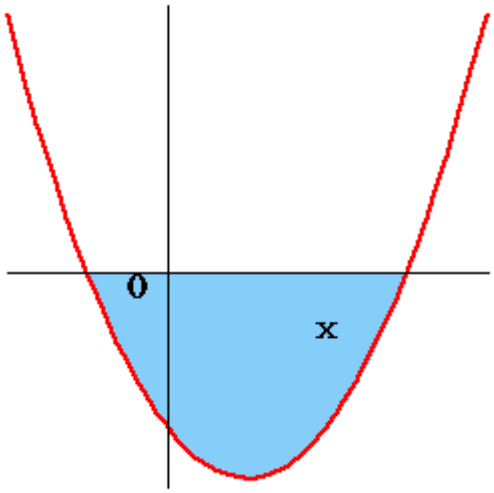
(d) Graph C

Question 5: (1 point)

Find the angle between the vectors $(-2,\ 4)$ and $(-1,\ 1)$.
Give your answer in radians, accurate to at least 3 decimal places.

Question 6: (1 point)

The parabola with equation $y = 3x^2 - 6x - 9$ is shown in the diagram.



Find the area enclosed between the parabola and the x-axis, as shaded in the diagram.