Question 1

"A is a function of B" is written as:

A. $B = f(A)$
B. $A = f(B)$

Question 2

For B as a function of A:

A. A is the Domain and B is the Range
B. B is the Domain and A is the Range

Question 3

A	B
0	1
1	2
2	3
3	5
4	5

In the above table:

A. A is a function of B
B. B is a function of A.
C. Both A&B are true

Question 4

What is the domain of the following function?

$$f(x) = \frac{1}{x-4}$$

Question 5

What is the range of the following function?

$$f(x) = \frac{1}{x-4}$$

Question 6

What is the domain of the following function?

$$f(x) = \frac{1}{\sqrt{1-x^2}}$$

Question 7

What is the range of the following function?

$$f(x) = \frac{1}{\sqrt{1-x^2}}$$

Question 8

What is the domain of the following function?

$$f(x) = \sqrt{2x - 6}$$

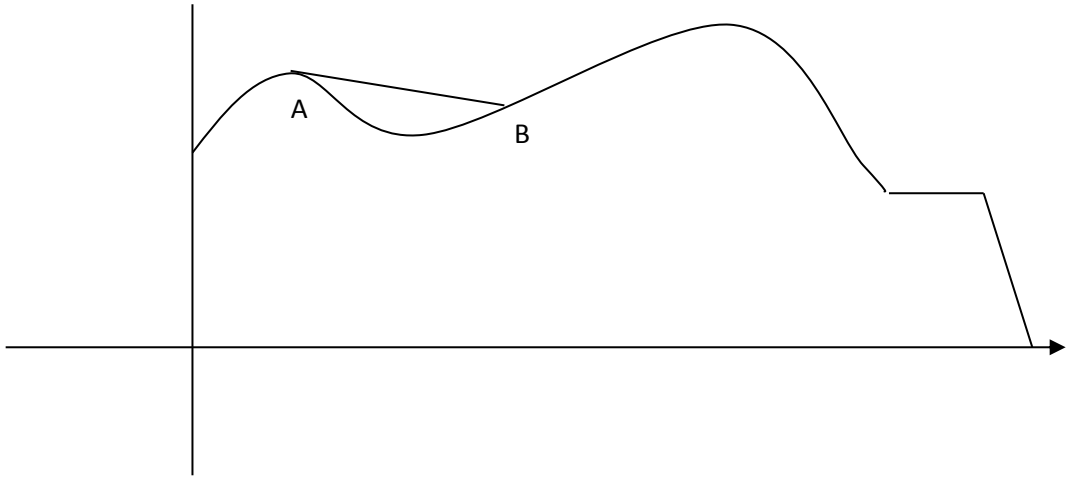
Question 9

What is the range of the following function?

$$f(x) = \sqrt{2x - 6}$$

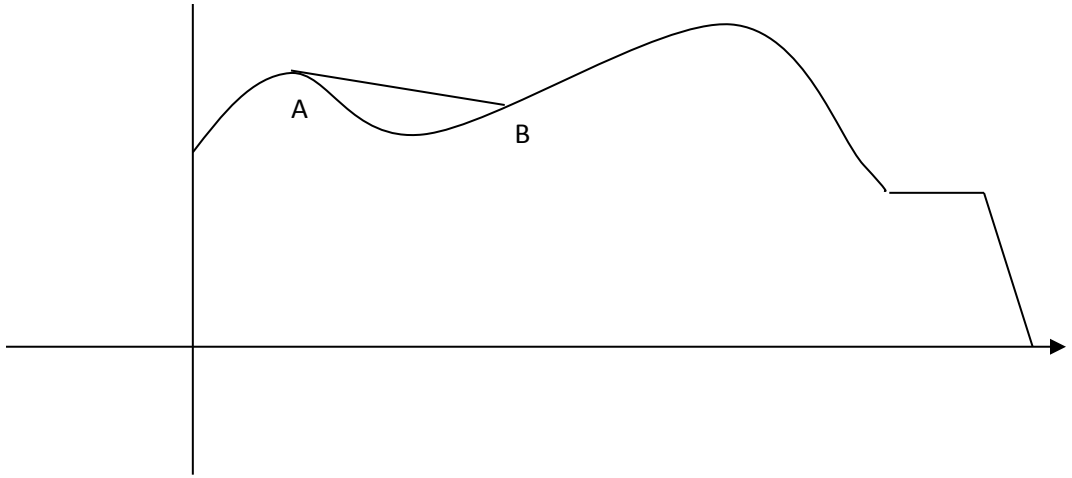
Question 10

In the graph below, what is the line connecting A and B called?



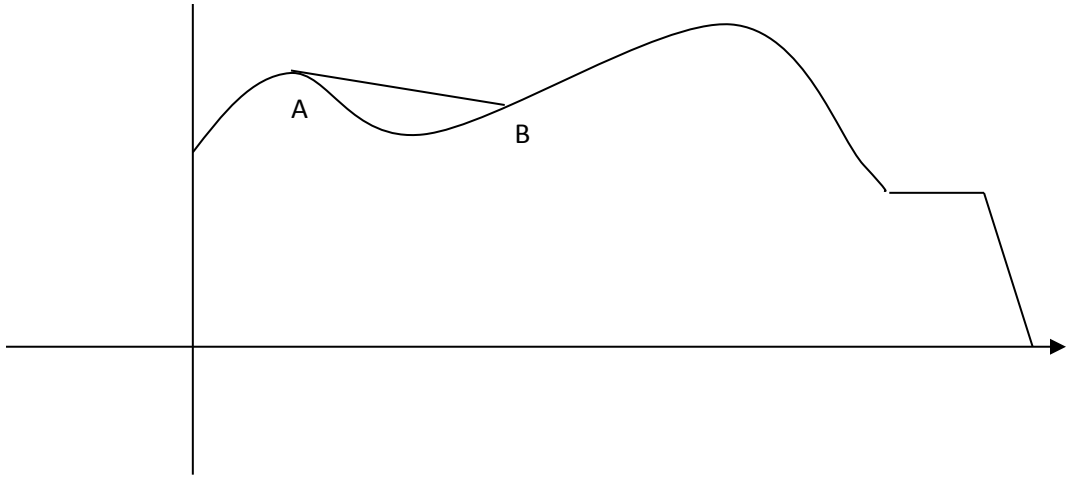
Question 11

If the graph represents distance from home, what does the slope of the line from A to B represent?



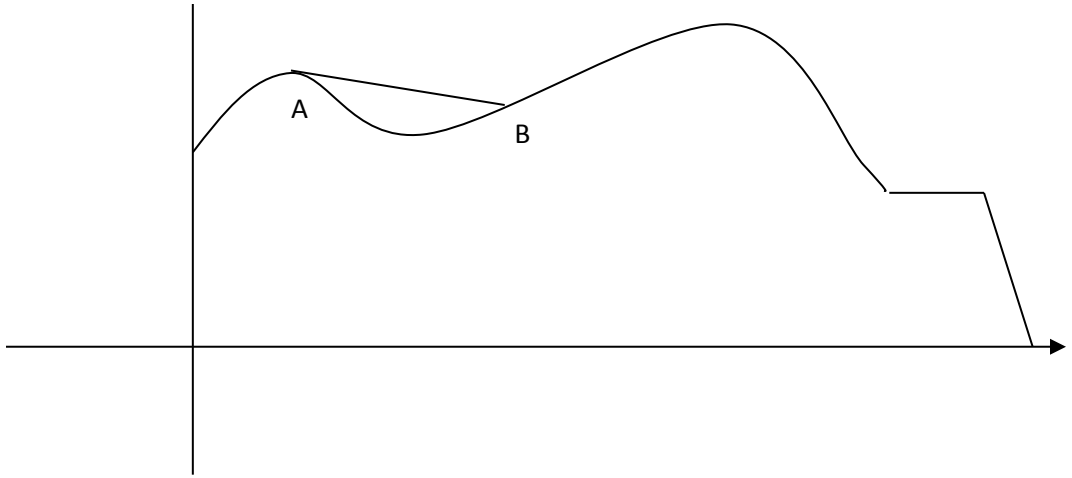
Question 12

If the graph represents distance from home what would the slope of the tangent line at B represent?



Question 13

If the graph represents distance from home of a person riding a bike, what does it mean when the graph is a horizontal line?



Question 14

Write down the expression for the derivative using Fermat's method: e.g. $f'(x) = \ldots$.

Question 15

Use Fermat's method to find the derivative of $f(x) = x^2 + 4$.

Question 16

Use the rules we found to find the derivative of

$$f(x) = 5x^4 - 2x^3 + 2$$

Question 17

Find the derivative of the following:

$$f(x) = 5$$

Question 18

Find the derivative of the following:

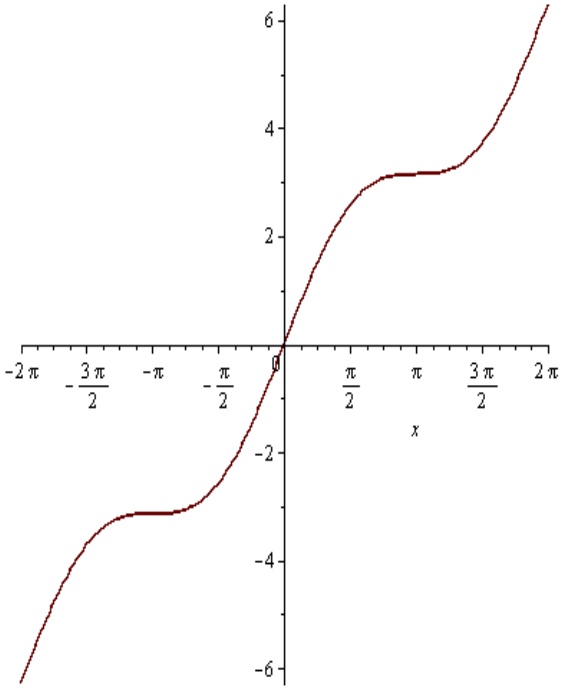
$$f(x) = \frac{2}{x^3}$$

Question 19

Find the derivative of the following:

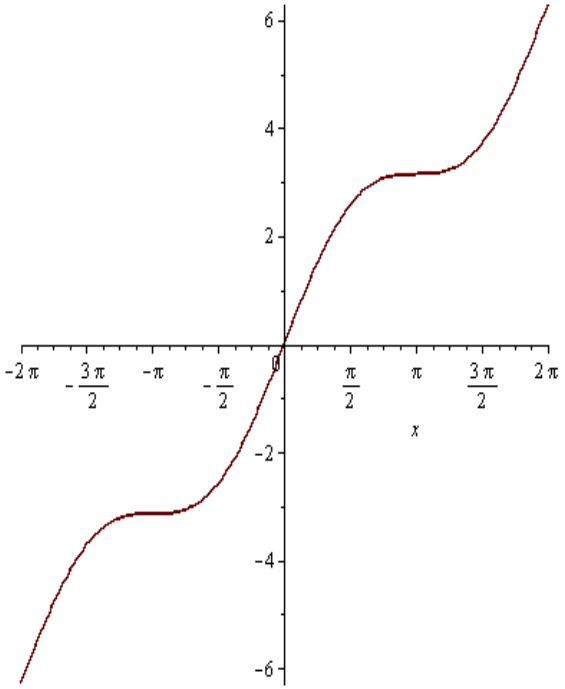
$$f(x) = 4\sqrt{x}$$

Question 20



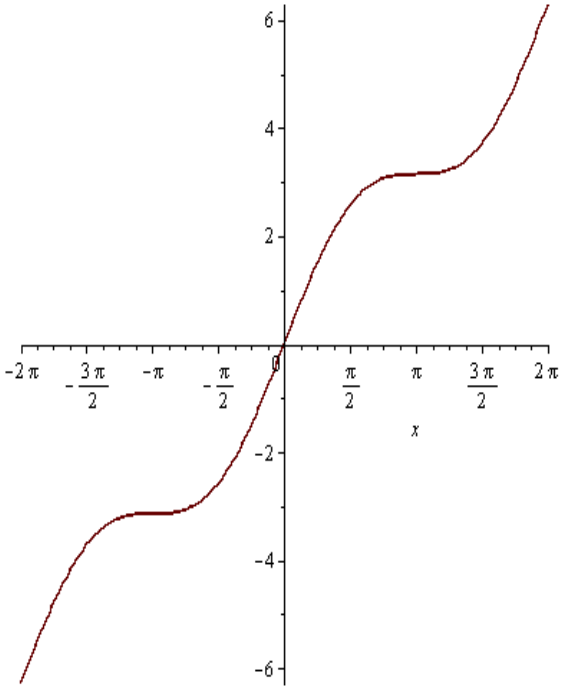
Approximately where is the derivative of the graph positive?

Question 21



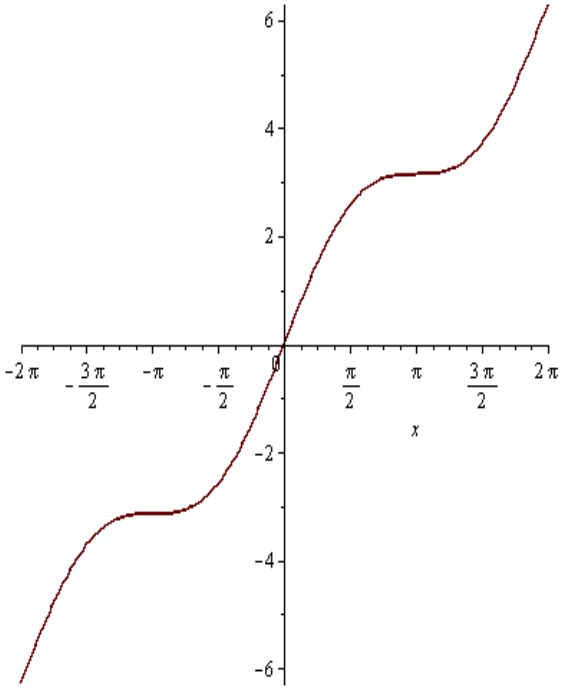
Approximately where is the derivative of the graph 0?

Question 22



Approximately where does the graph have an inflection point?

Question 23



What will f’(x) look like where f(x) has an inflection point?

Question 24

A rock thrown into the air has a height t feet at time t seconds given by $h(t) = -16t^2 + 112t + 288$

What is the initial height of the rock?

Question 25

A rock thrown into the air has a height t feet at time t seconds given by $h(t) = -16t^2 + 112t + 288$

At what time does the rock reach its maximum height?

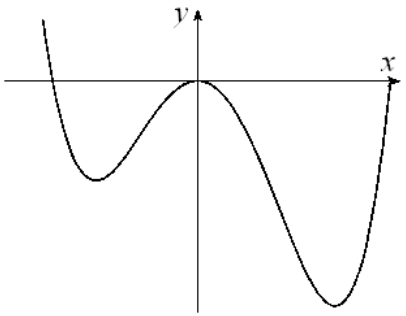
Question 25

A rock thrown into the air has a height t feet at time t seconds given by $h(t) = -16t^2 + 112t + 288$

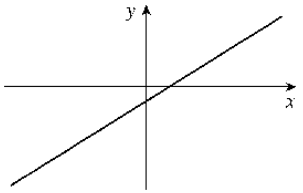
How fast is the rock going when it hits the ground?

Question 26

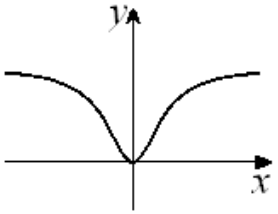
Given the graph of $y = f(x)$ below, circle the letter of the graph which best represents the graph of the derivative,



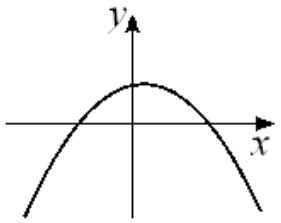
a.



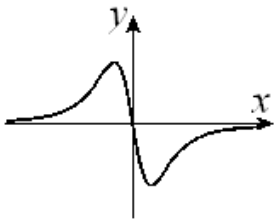
b.



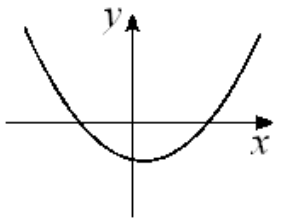
c.



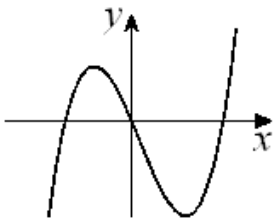
d.



e.



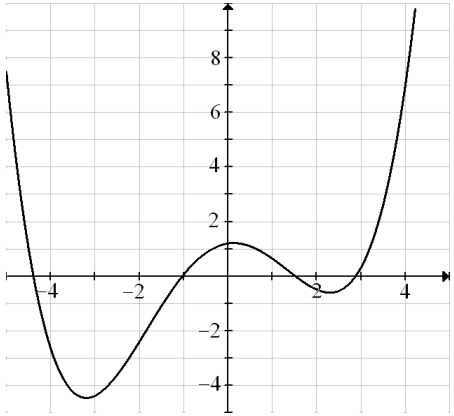
f.



Question 27

For the function *f* whose graph is given, arrange the following values in increasing order

$$f'(-4), f'(-3), f'(-1), f'(0), f'(1), f'(2), f'(4)$$



_____ ≤ _____ ≤_____ ≤ _____ ≤ _____ ≤ _____ ≤ _____

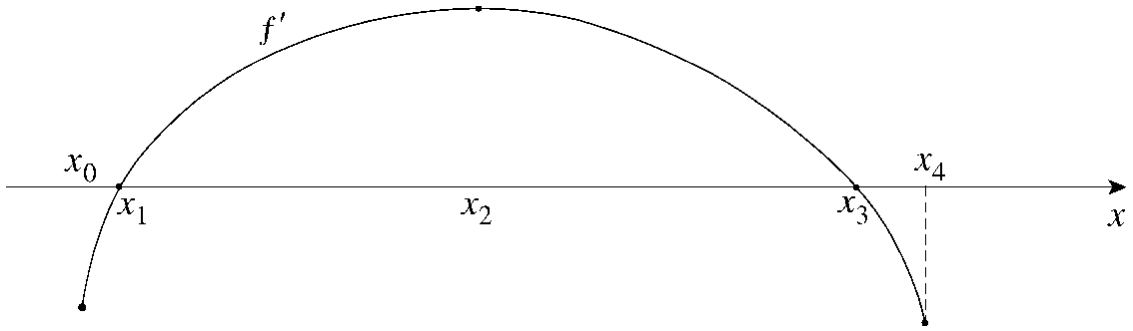
Question 28

Sketch a graph that has the following properties:

- $f(0) = 0$
- $f'(x) > 0$ for $x \leq 0$
- $f(x)$ is concave down at $x = 2$
- $f(x)$ has an inflection point at $x=3$
- $f'(x) = 0$ at $x=4$

Question 29

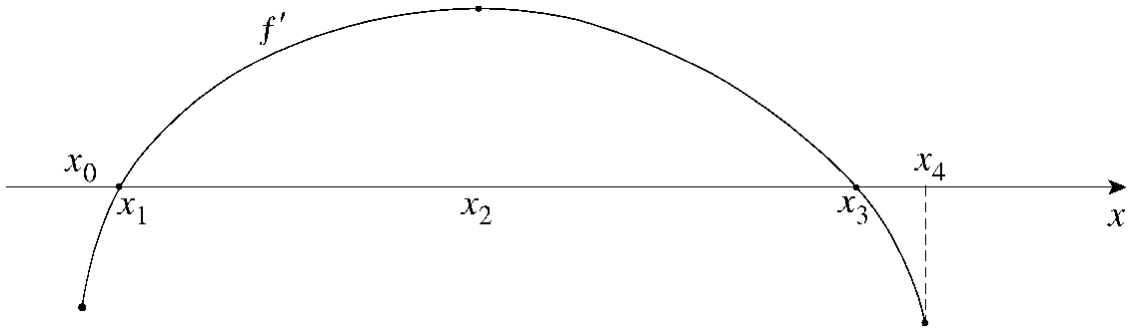
Given the graph of f’(x) , for which values of x is f(x) increasing?



(NOTE: You are looking at the graph of the DERIVATIVE.)

Question 30

Given the graph of f’(x) , for which value(s) of x does f(x) have a local minimum?



(NOTE: You are looking at the graph of the DERIVATIVE.)