

PROPERTIES OF A FUNCTION

1 A

2 B

3 A

4 B

5 B

6 B

7 A

8 B

Mrs. Næss

Name : \_\_\_\_\_

Group : \_\_\_\_\_

Date : \_\_\_\_\_

568436 - Mathematics

Question Booklet

1

The rule of function  $g$  is  $g(x) = 2x + 60$ .

Over which interval is function  $g$  negative?

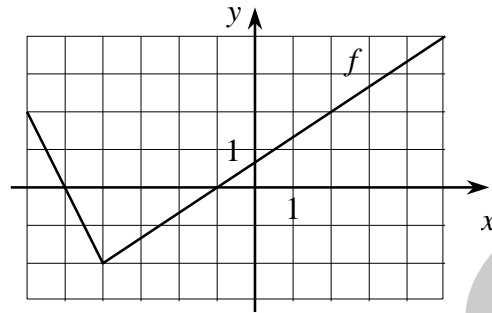
A)  $]-\infty, -30]$

C)  $[-30, +\infty[$

B)  $]-\infty, 30]$

D)  $[30, +\infty[$

- 2 Consider function  $f$  represented in the Cartesian plane on the right.

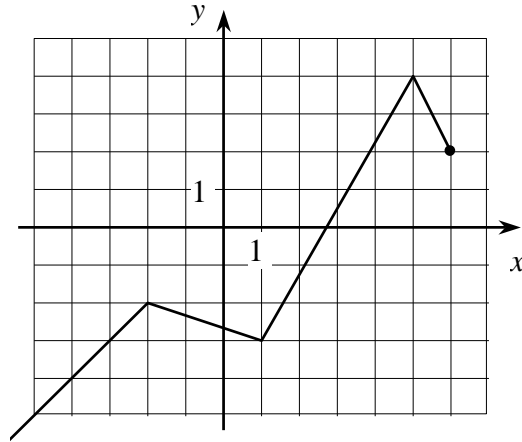


Which of the following statements is true?

- A)  $f(0) = -1$
- B)  $\text{ran } f = [-2, +\infty[$
- C) The minimum of function  $f$  is  $-4$ .
- D) Function  $f$  is decreasing over the interval  $]-\infty, -2]$ .

3

Consider the graph of function  $g$  in the Cartesian plane below.

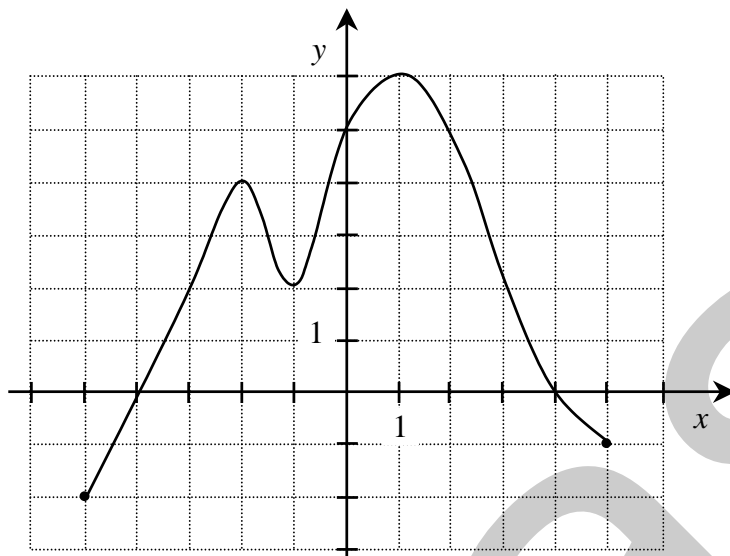


Which of the following statements is true?

- A)  $\text{dom } g = ]-\infty, 6]$
- B) The maximum of function  $g$  is 6.
- C) Function  $g$  is positive over the interval  $[1, 5]$ .
- D) Function  $g$  is increasing over the interval  $[-3, 4]$ .

4

Consider the graph of function  $f$  in the Cartesian plane below.



Which of the following statements is true?

- A)  $f(5) = 0$
- B)  $\text{dom } f = [-5, 5]$
- C) The maximum of function  $f$  is 4.
- D) Function  $f$  is positive over the interval  $[0, 6]$ .

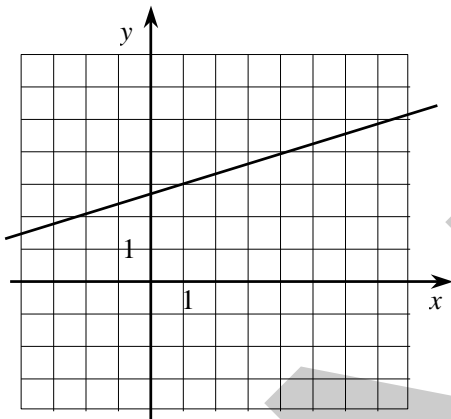
5

The following are some of the characteristics of a function  $f$ :

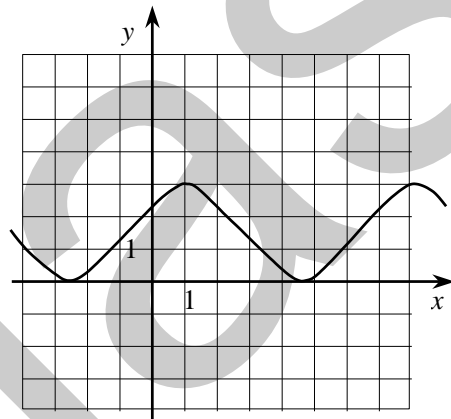
- function  $f$  is increasing on  $]-\infty, 1]$
- the maximum of function  $f$  is 3

Which one of the following graphs could represent function  $f$ ?

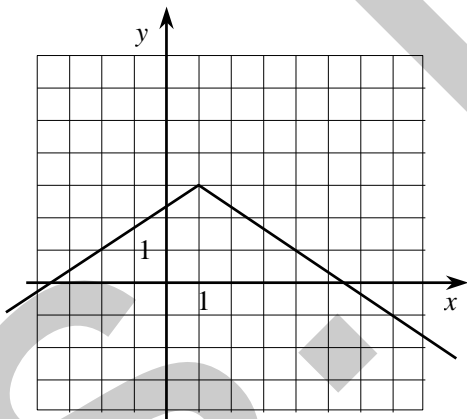
A)



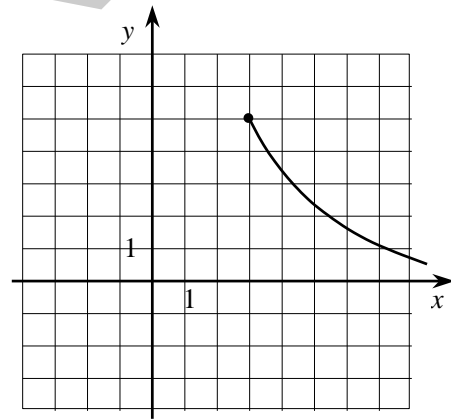
C)



B)

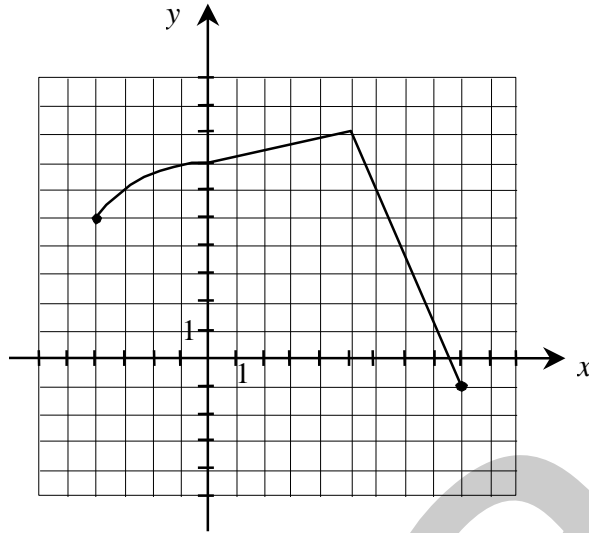


D)



6

Function  $f$  is represented by the following Cartesian coordinate graph.



Which of the following statements is true?

- A) The maximum of function  $f$  is equal to 9.
- B) The range of function  $f$  is  $[-1, 8]$ .
- C) Function  $f$  is negative in the interval  $[5, 9]$ .
- D) The minimum of function  $f$  is equal to -4.



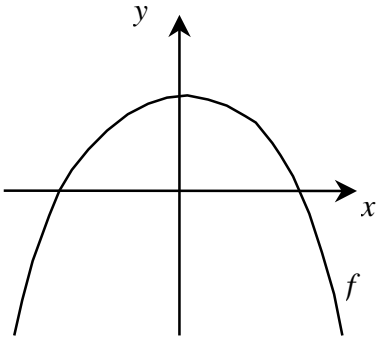
7

Some of the characteristics of a polynomial function  $f$  are listed below:

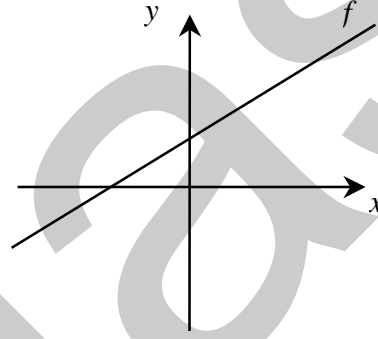
- Function  $f$  is decreasing in  $[0, +\infty[$ .
- Function  $f$  has no minimum.
- The  $y$ -intercept of function  $f$  is positive.

Which one of the following graphs could represent function  $f$ ?

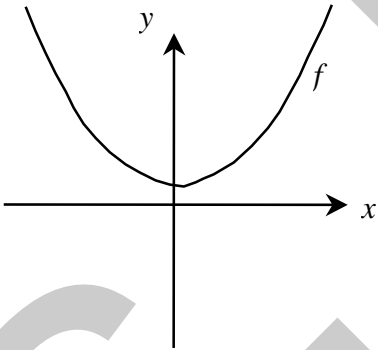
A)



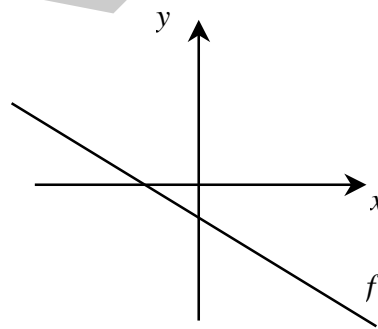
C)



B)

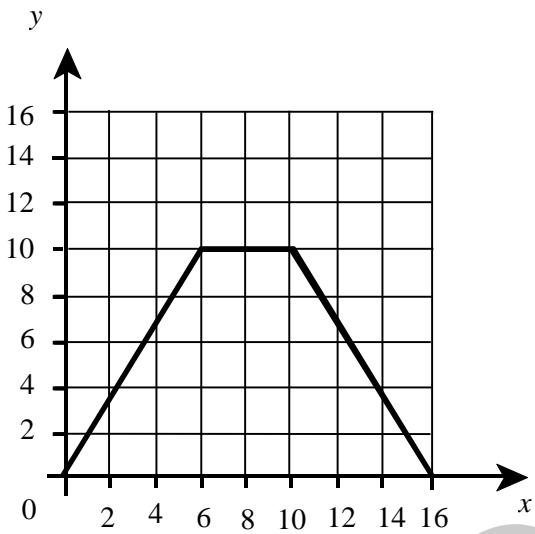


D)



8

The following Cartesian graph represents a function.



On which interval is this function increasing?

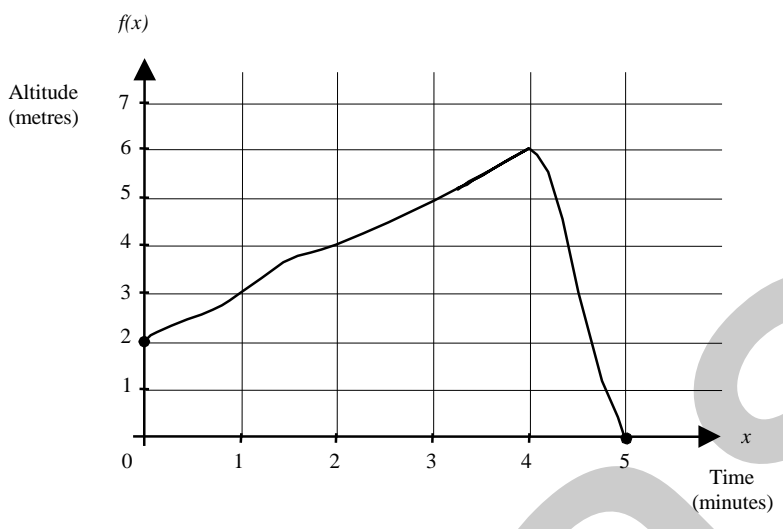
A) [0, 6]

C) [6, 16]

B) [0, 10]

D) [10, 16]

9 Given the function  $f(x)$  representing the altitude (in metres) of a bird as a function of the number of minutes from the time he left the branch of a tree to the moment he lands on the ground.



Which of the following statements is FALSE?

- A)  $f(x)$  is positive for all  $x$  in the interval  $[0, 5]$ .
- B)  $f(x)$  is increasing for all  $x$  in the interval  $[0, 4]$ .
- C) For  $f(x)$ , the domain is  $[0, 5]$ .
- D) For  $f(x)$ , the range is  $[2, 6]$ .