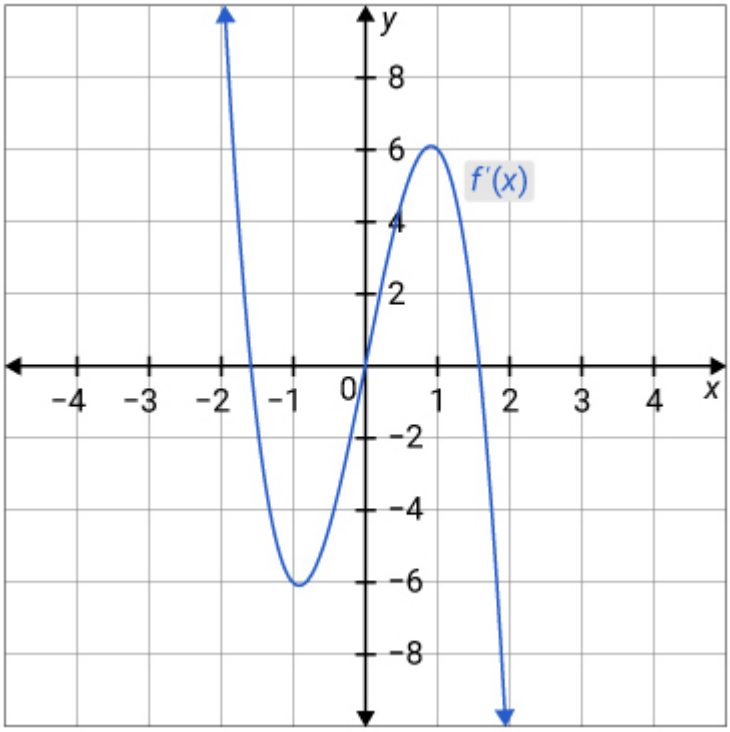
View hints View feedback Play All

QUESTION 1

Drag and drop the correct answer into the space(s) provided.

Given the following graph of the derivative $f'(x)$, determine key features of the graph of the function, $f(x)$.



The graph of $f'(x)$ is above the x-axis for $x < -1.58$ and $0 < x < 1.58$, so the graph of $f(x)$ is increasing for $x < -1.58$ and $0 < x < 1.58$. The graph of

$f'(x)$

crosses ✓ the

x

-axis at about

$x = -1.58$

,

$x = 0$

and

$x = 1.58$

, and so the graph of

$f(x)$

has a maximum or a minimum ✓ there. The graph of

$f'(x)$

is below ✓ the

x

-axis for

$-1.58 < x < 0$

and

$x > 1.58$

, so the graph of

$f(x)$

is decreasing ✓ for

$-1.58 < x < 0$

and

$x > 1.58$

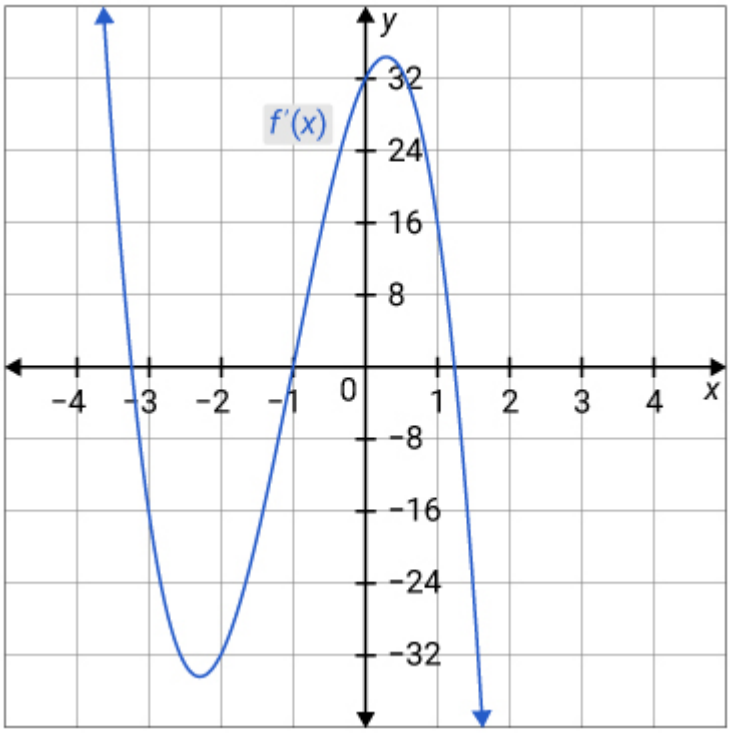
.

skips over | on | constant

QUESTION 2

Drag and drop the correct answer into the space(s) provided.

Given the following graph of the derivative $f'(x)$, determine key features of the graph of the function, $f(x)$.



The graph of $f'(x)$ is [above] the x-axis for $x < -3.236$ and $-1 < x < 1.236$, so the graph of $f(x)$ is [increasing] for $x < -3.236$ and $-1 < x < 1.236$. The graph of

$f'(x)$

crosses ✓ the

x

-axis at about

$x = -3.236$

,

$x = -1$

, and

$x = 1.236$

, and so the graph of

$f(x)$

has a maximum or a minimum ✓ there. The graph of

$f'(x)$

is below ✓ the

x

-axis for

$-3.236 < x < -1$

and

$x > 1.236$

, so the graph of

$f(x)$

is decreasing ✓ for

$-3.236 < x < -1$

and

$x > 1.236$

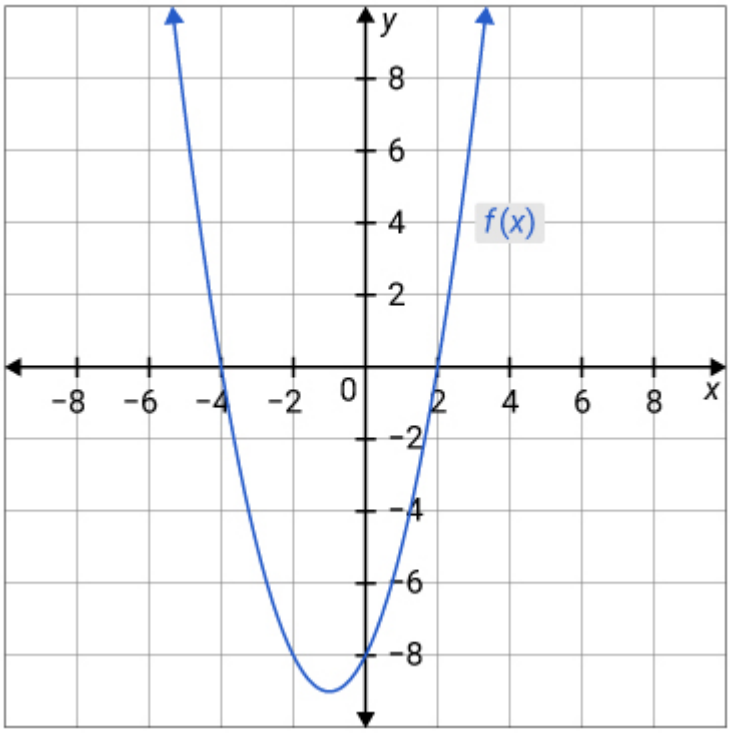
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on constant skip over

QUESTION 3

Drag and drop the correct answer into the space(s) provided.

Given the following graph of $f(x)$, determine key features of the graph of the derivative function, $f'(x)$.



The graph of $f(x)$ has a [minimum] at $x = -1$, so the graph of $f'(x)$ at $x = -1$ [crosses] the x-axis. When $x < -1$, the function is [decreasing], so the graph of $f'(x)$

is below ✓ the

x

-axis. When

$x > -1$

, the function is increasing ✓, so the graph of

$f'(x)$

is above ✓ the

x

-axis.

constant | maximum | skips over | on

QUESTION 4

Drag and drop the correct answer into the space(s) provided.

Given the following graph of the derivative

$f'(x)$

, determine key features of the graph of the function,

$f(x)$

.

The graph of

$f'(x)$

is above ✓ the

x

-axis for

$x < -0.87$

and

$x > 1.535$

, so the graph of

$f(x)$

is increasing for

$x < -0.87$

and

$x > 1.535$

. The graph of

$f'(x)$

crosses the

x

-axis at about

$x = -0.87$

and

$x = 1.535$

, and so the graph of

$f(x)$

has a maximum or a minimum there. The graph of

$f'(x)$

is below the

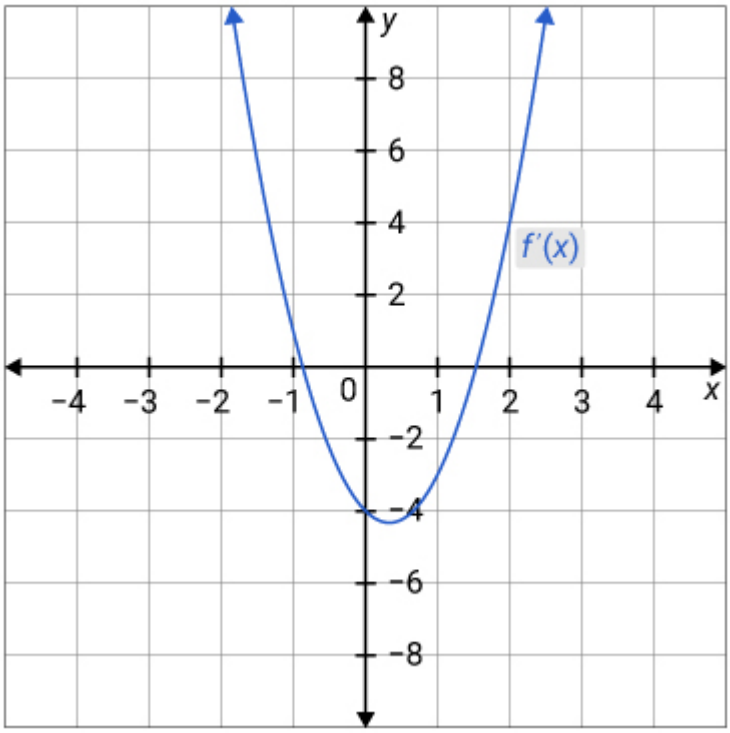
x

-axis for

$-0.87 < x < 1.535$

, so the graph of

$f(x)$



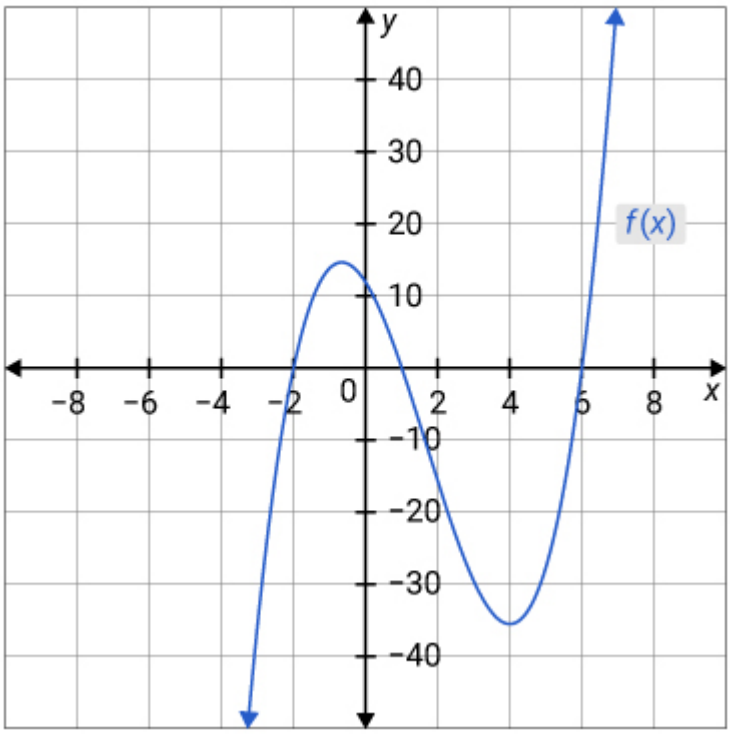
is decreasing for $-0.87 < x < 1.535$.

on | constant | skips over

QUESTION 5

Drag and drop the correct answer into the space(s) provided.

Given the following graph of $f(x)$, determine key features of the graph of the derivative function, $f'(x)$.



The graph of $f(x)$ has a maximum at $x = -\frac{2}{3}$ and a minimum at $x = 4$ so the graph of

$f'(x)$

at

$x = -\frac{2}{3}$

and

$x = 4$

crosses ✓ the

x

-axis. When

$x < -\frac{2}{3}$

and

$x > 4$

, the function is increasing ✓, so the graph of

$f'(x)$

is above ✓ the

x

-axis. When

$-\frac{2}{3} < x < 4$

, the function is decreasing ✓, so the graph of

$f'(x)$

is below ✓ the

x

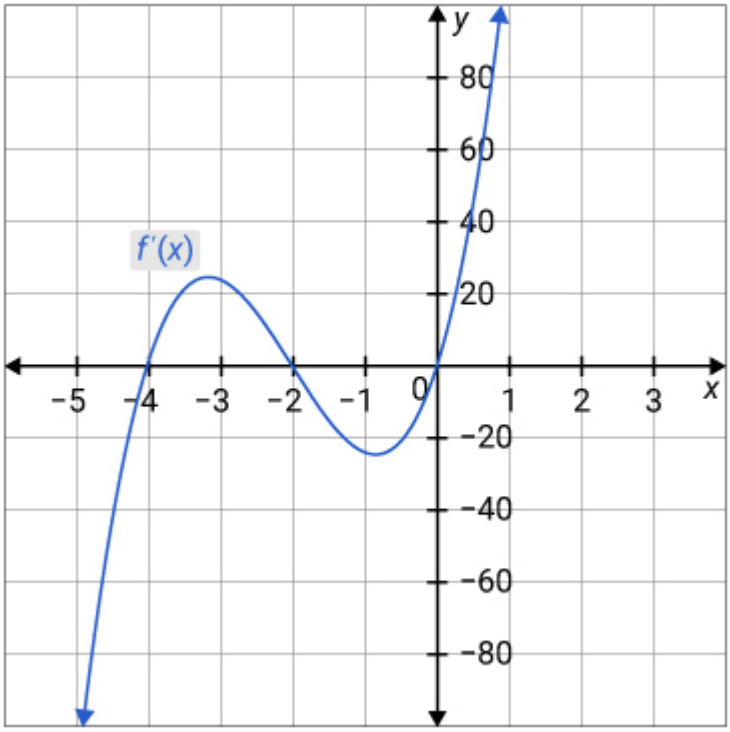
-axis.

constant on skips over

QUESTION 6

Fill in the blank(s) with the correct answer.

Given the graph of the derivative $f'(x)$, describe key features of the graph of the original function $f(x)$.



The graph of $f(x)$ is increasing over the interval

-4 ✓ $< x <$ -2 ✓ and $x >$ 0 ✓. The graph of $f(x)$ is decreasing over the interval -2 ✓ $< x <$ 0 ✓ and x< -4 ✓. There is a minimum at

$x =$

-4 ✓ and

$x = 0$

. There is a maximum at

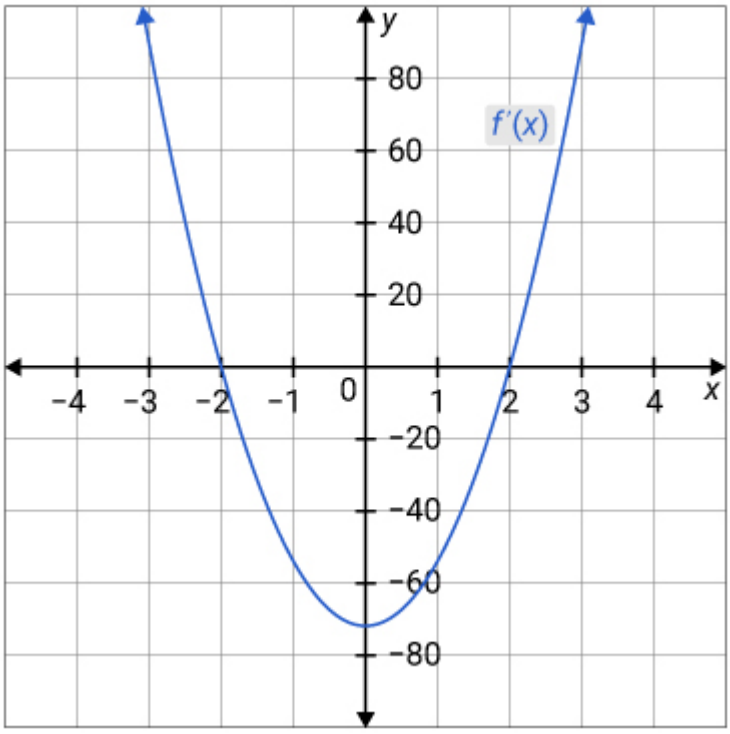
$x =$

-2 ✓.

QUESTION 7

Fill in the blank(s) with the correct answer.

Given the graph of the derivative $f'(x)$, describe key features of the graph of the original function $f(x)$.



The graph of $f(x)$ is increasing over the interval

$x <$

-2 ✓

and

$x >$

2 ✓. The graph of

$f(x)$

is decreasing over the interval -2 ✓

$< x <$

2 ✓ . There is a maximum at

$x =$

-2 ✓ . There is a minimum at

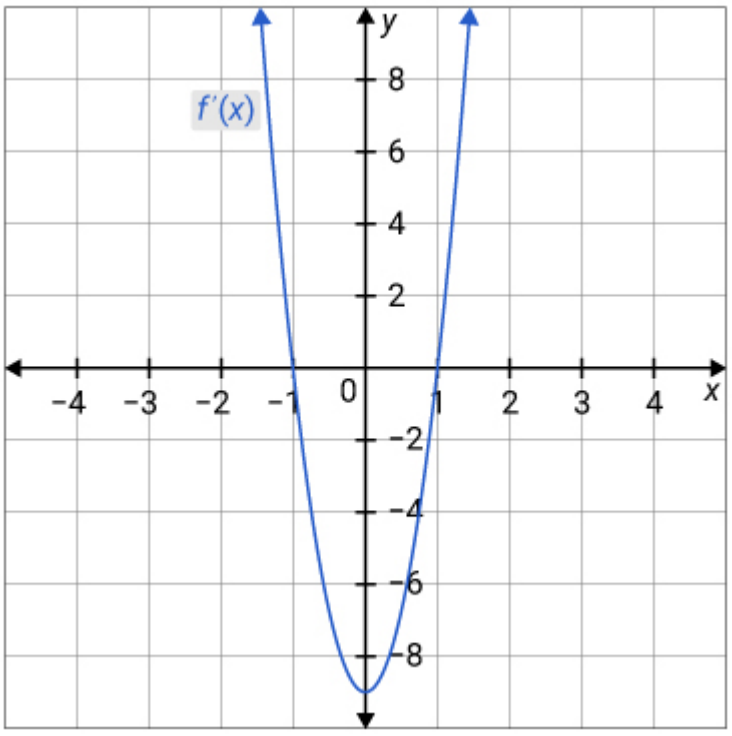
$x =$

2 ✓ .

QUESTION 8

Fill in the blank(s) with the correct answer.

Given the graph of the derivative $f'(x)$, describe key features of the graph of the original function $f(x)$.



The graph of $f(x)$ is increasing over the interval

$x <$

-1 ✓

and

$x >$ 1 ✓ . The graph of $f(x)$ is decreasing over the interval -1 ✓ $< x <$ 1 ✓ . There is a minimum at $x =$ 1 ✓ . There is a maximum at $x =$ -1 ✓ .

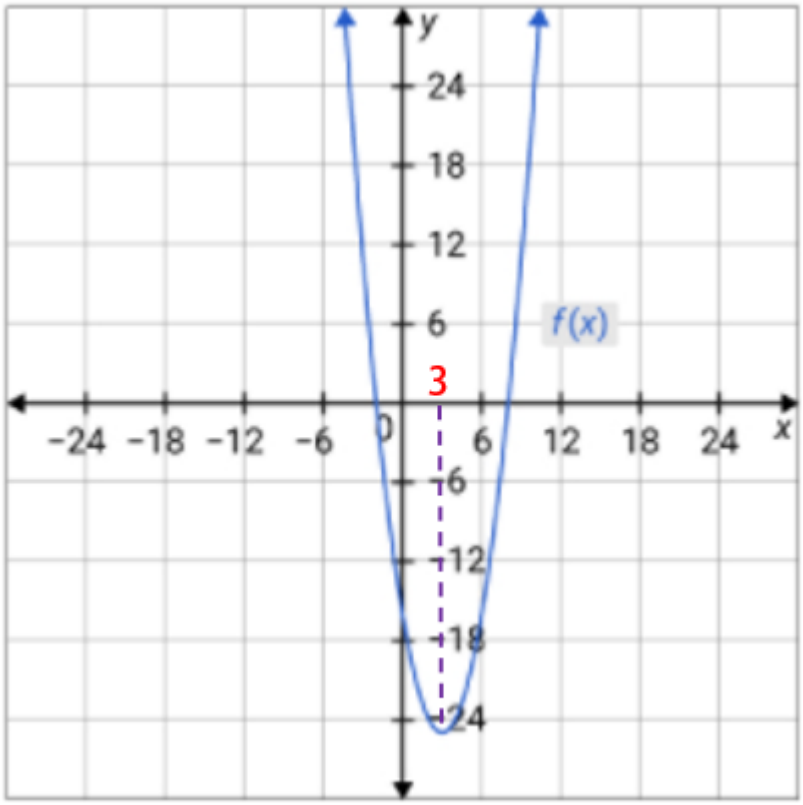
QUESTION 9

Fill in the blank(s) with the correct answer.

Given the following graph of $f(x)$, determine key features of the graph of the derivative function, $f'(x)$.

The graph of $f'(x)$ crosses the x-axis at

$x =$



3 ✓ . The graph of

$f'(x)$

is below the

x

-axis when

$x <$

3 ✓ and above the the

x

-axis when

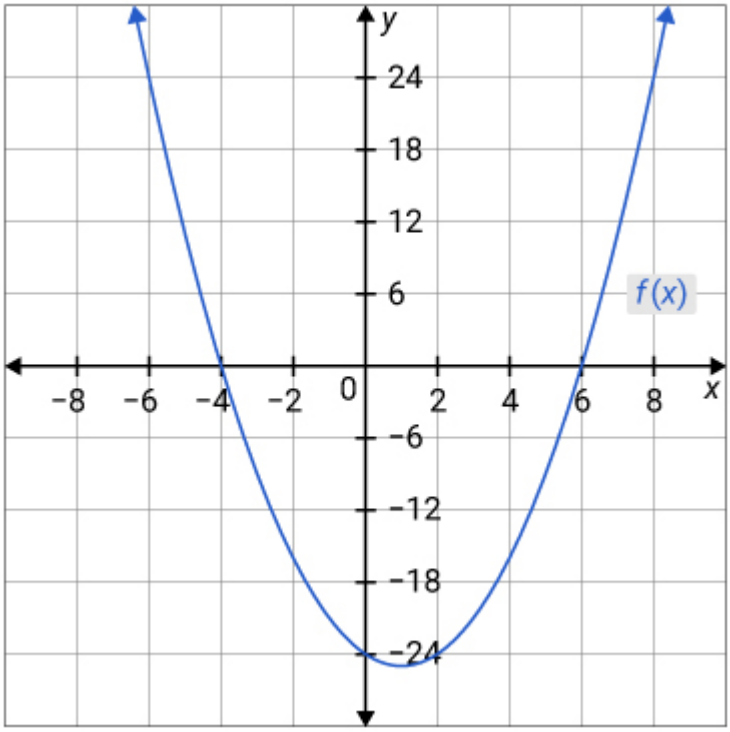
$x >$

3 ✓ .

QUESTION 10

Fill in the blank(s) with the correct answer.

Given the following graph of $f(x)$, determine key features of the graph of the derivative function, $f'(x)$.



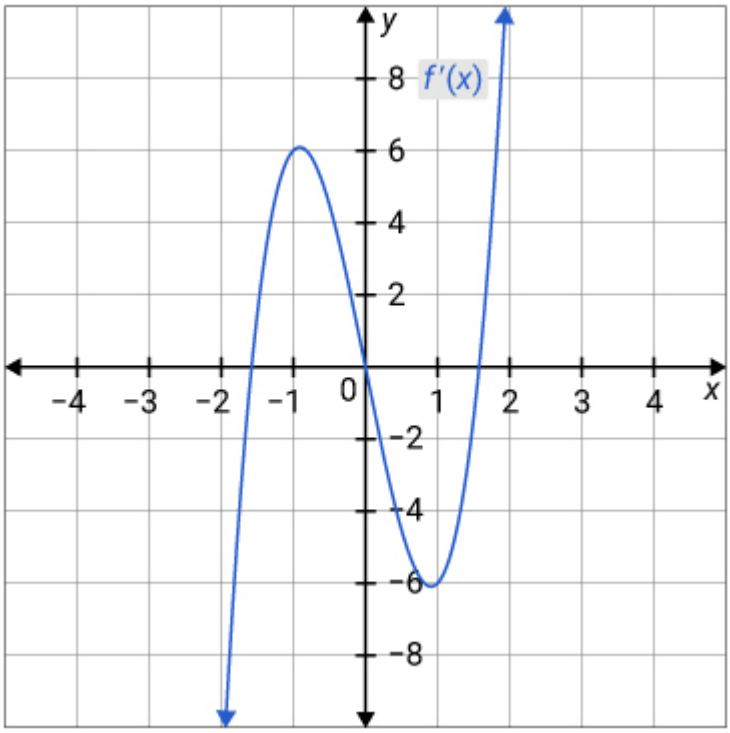
The graph of $f'(x)$ crosses the x-axis at $x =$ 1 ✓. The graph of $f'(x)$ is below the x-axis when $x <$ 1 ✓ and above the the x-axis when $x >$ 1 ✓.

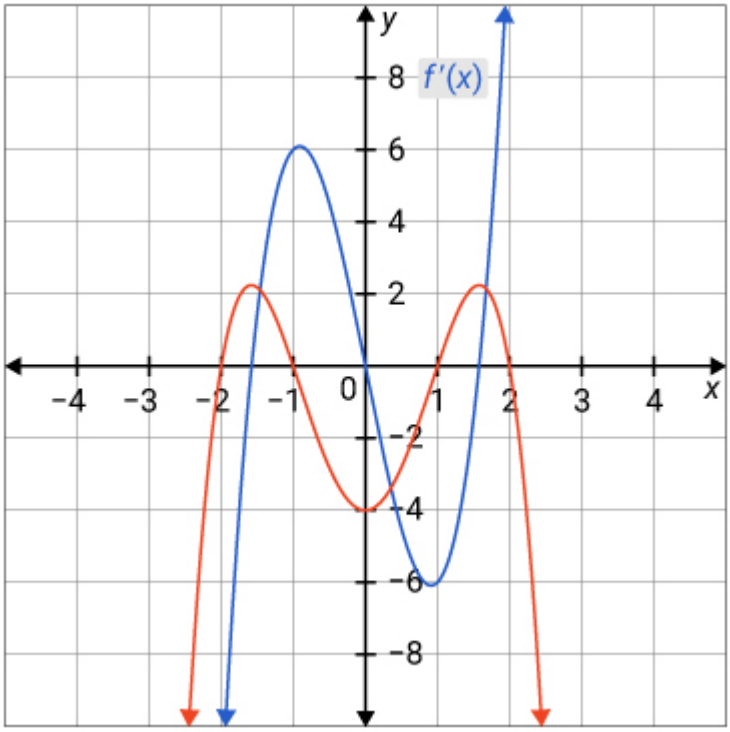
QUESTION 11

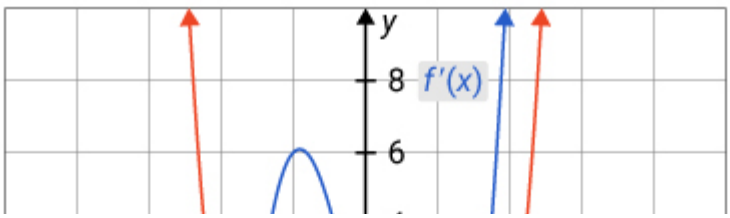
QUESTION 11

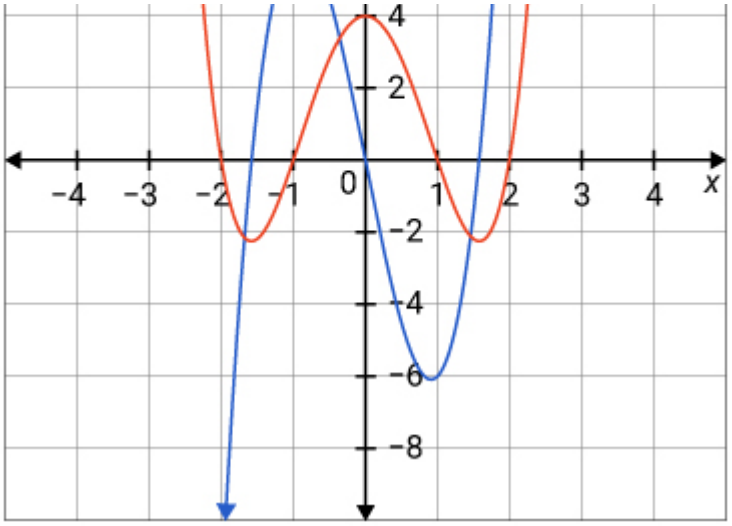
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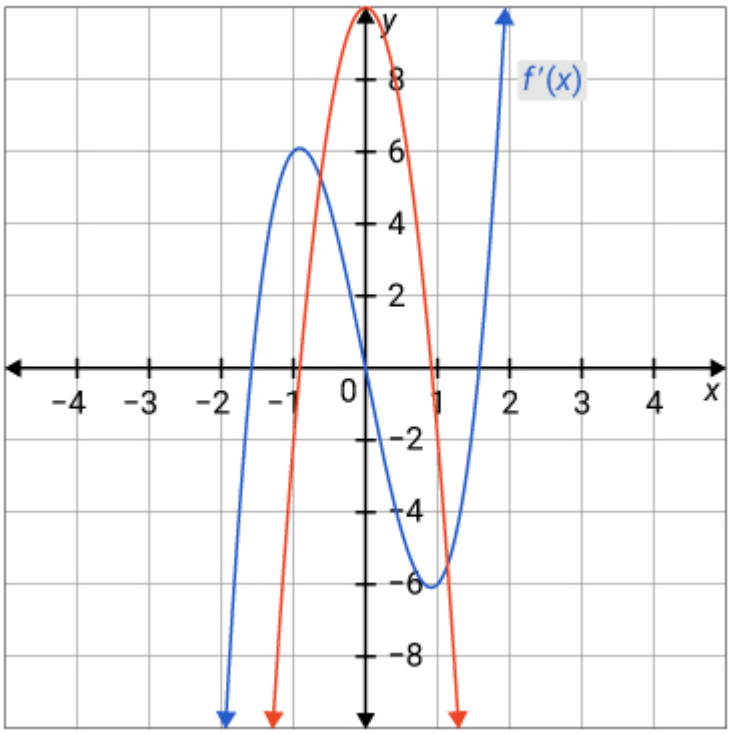
Given the graph of the derivative $f'(x)$, which could be a reasonable graph of the original function $f(x)$?

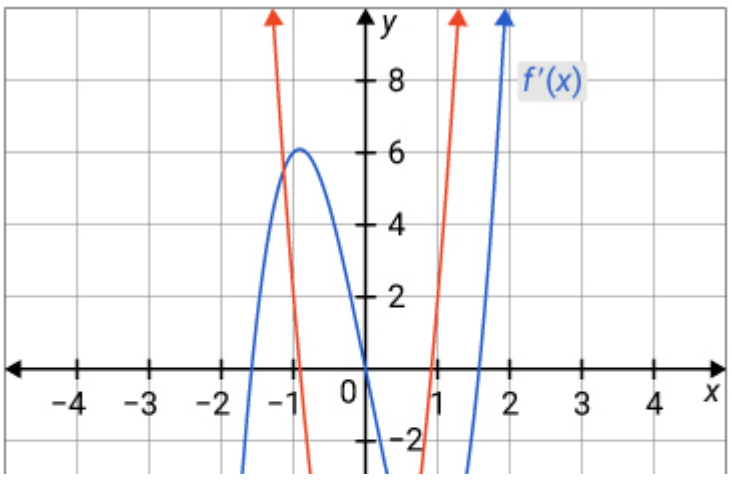


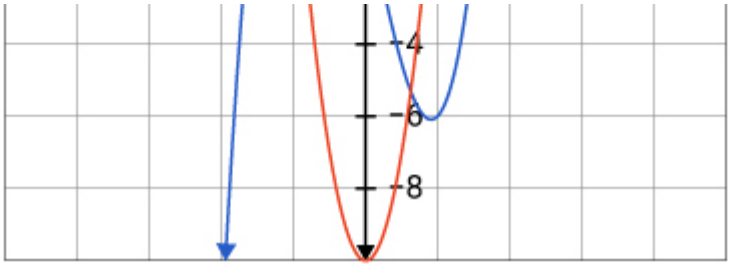





4
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x
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-8


y
f′(x)
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x
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-8

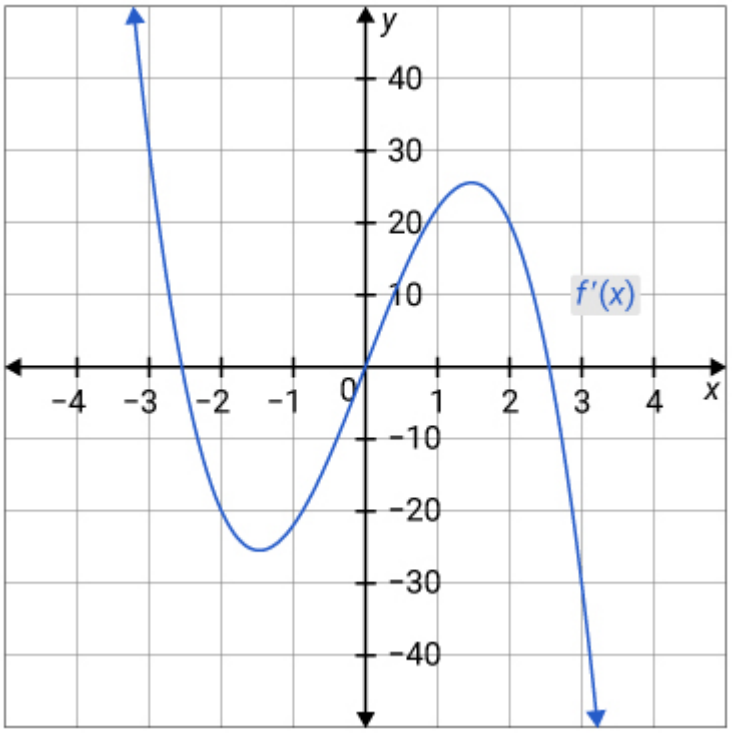

y
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x
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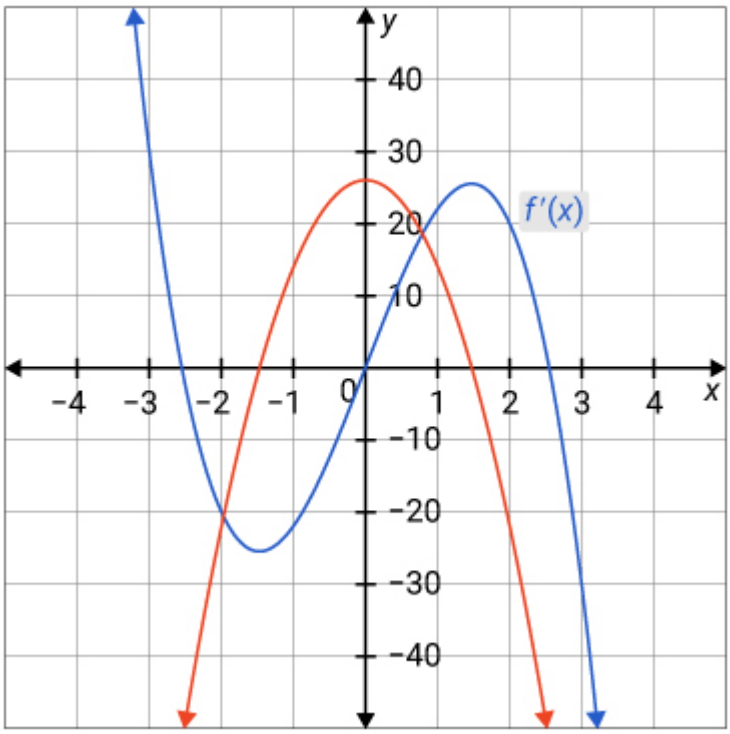


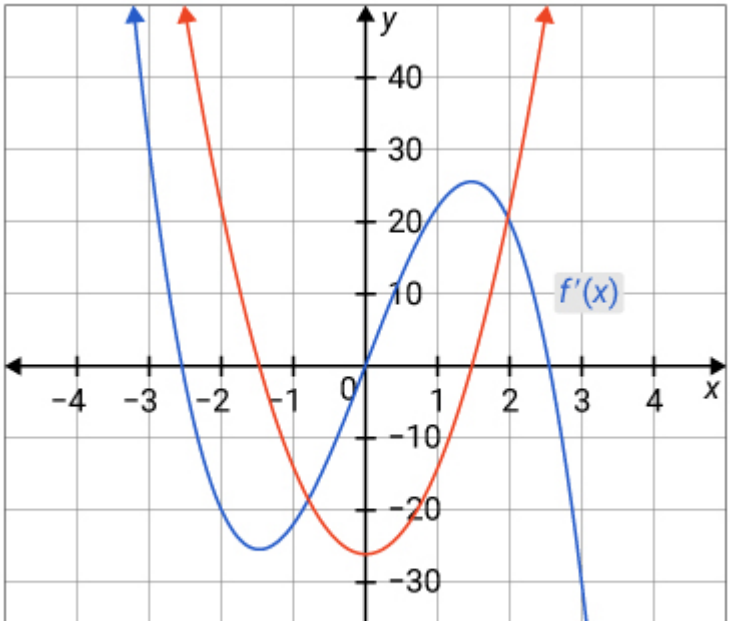
QUESTION 12

Select the correct option.

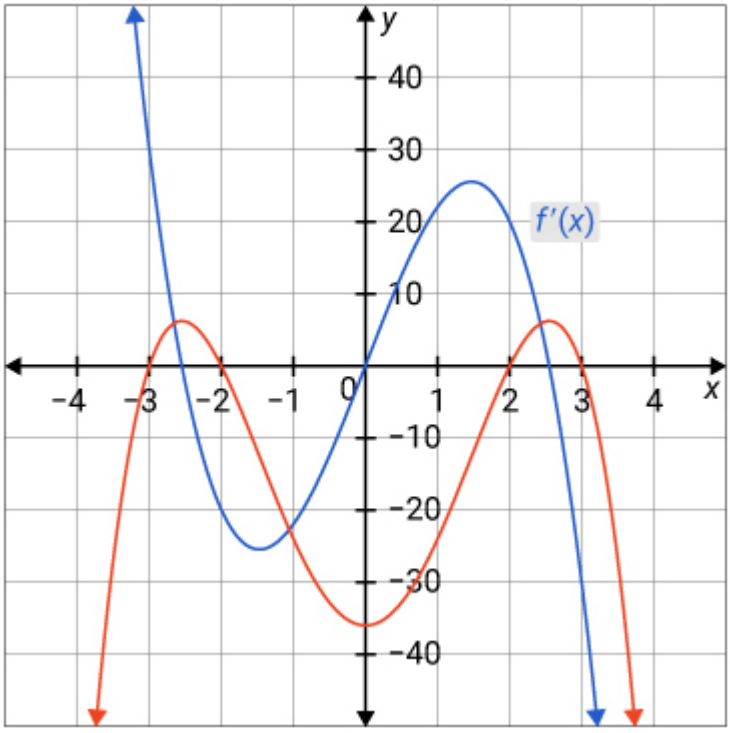
Given the graph of the derivative $f'(x)$, which could be a reasonable graph of the original function $f(x)$?

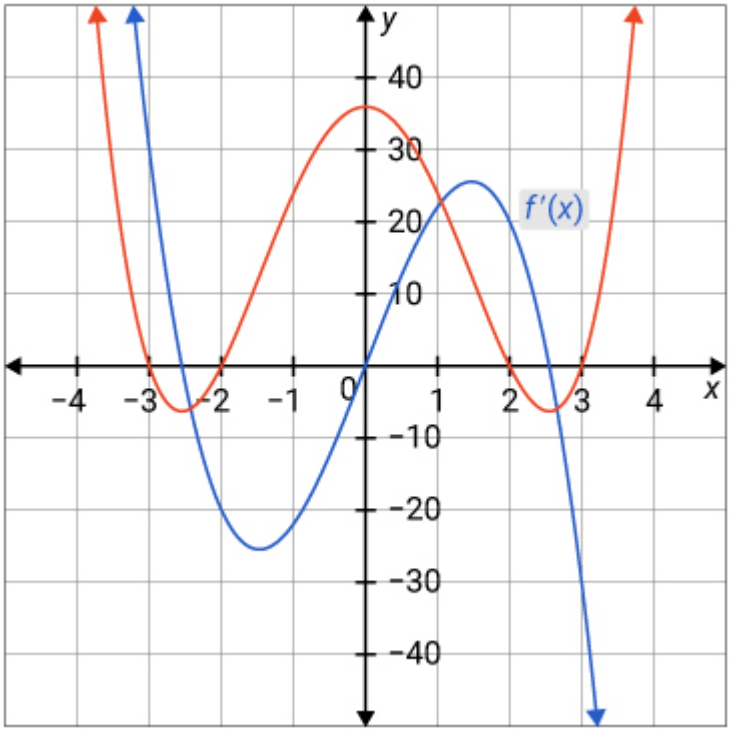



y
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f′(x)
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-40


y
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f′(x)
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-20
-30


-40

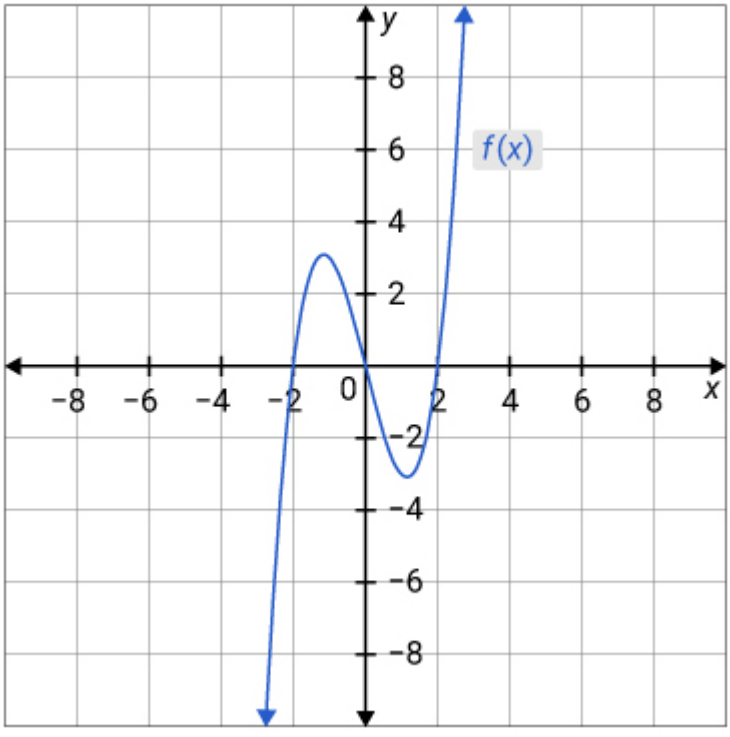

y
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f'(x)
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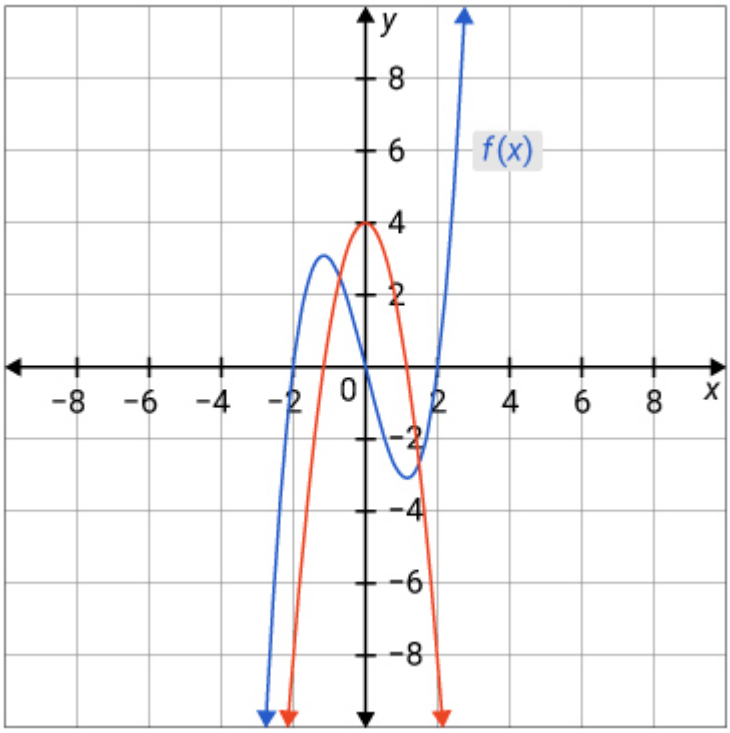


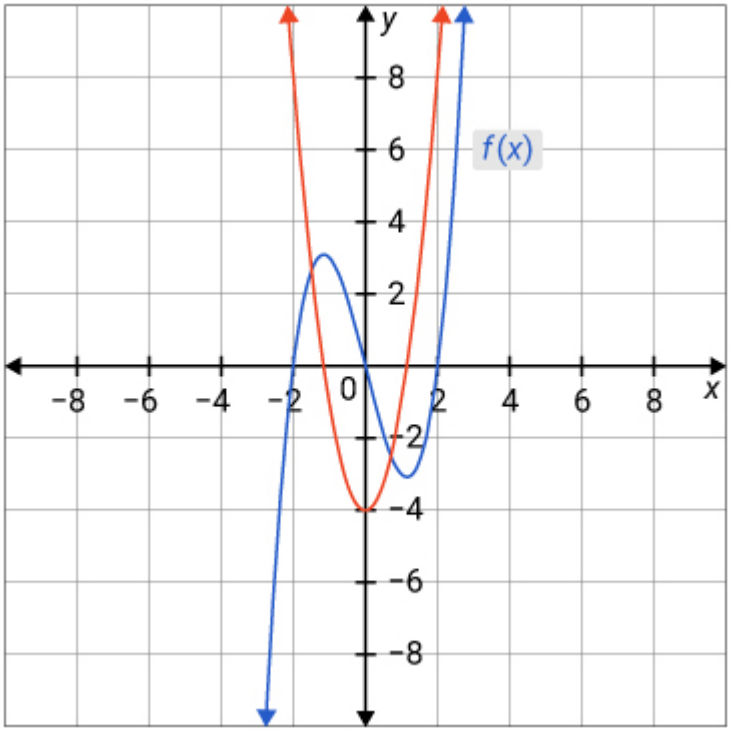
QUESTION 13

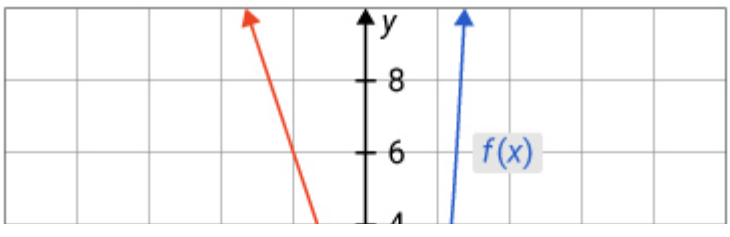
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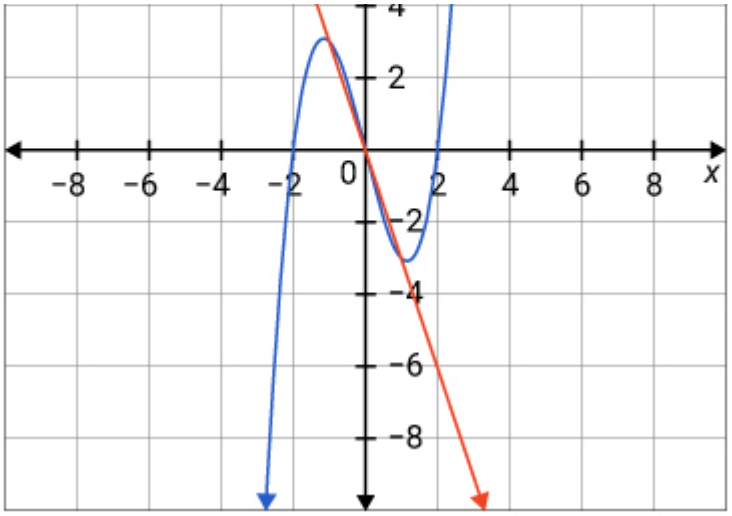
Given the following graph of $f(x)$, which could be a reasonable graph of $f(x)$ and the derivative of the function, $f'(x)$?

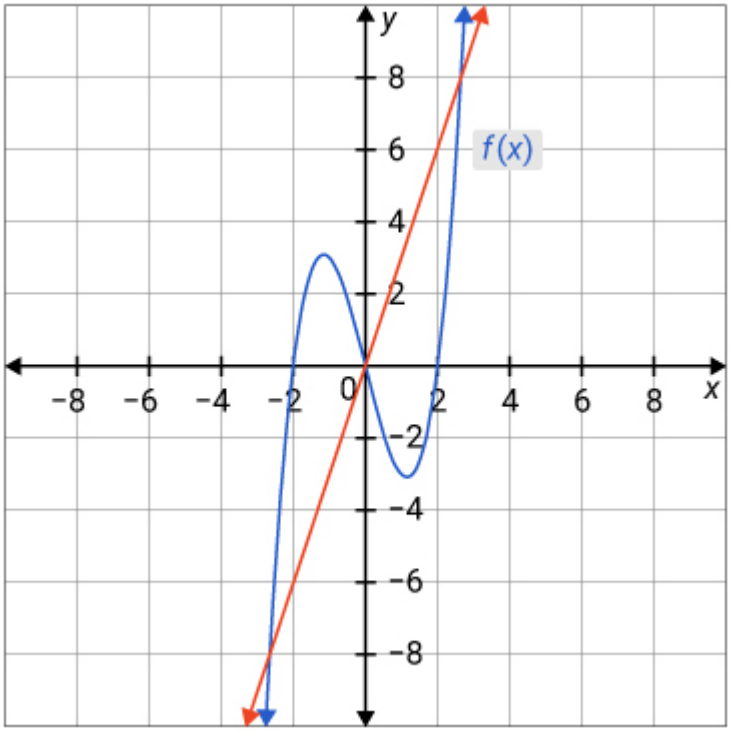



y
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f(x)
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y
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-8


y
8
6
f(x)





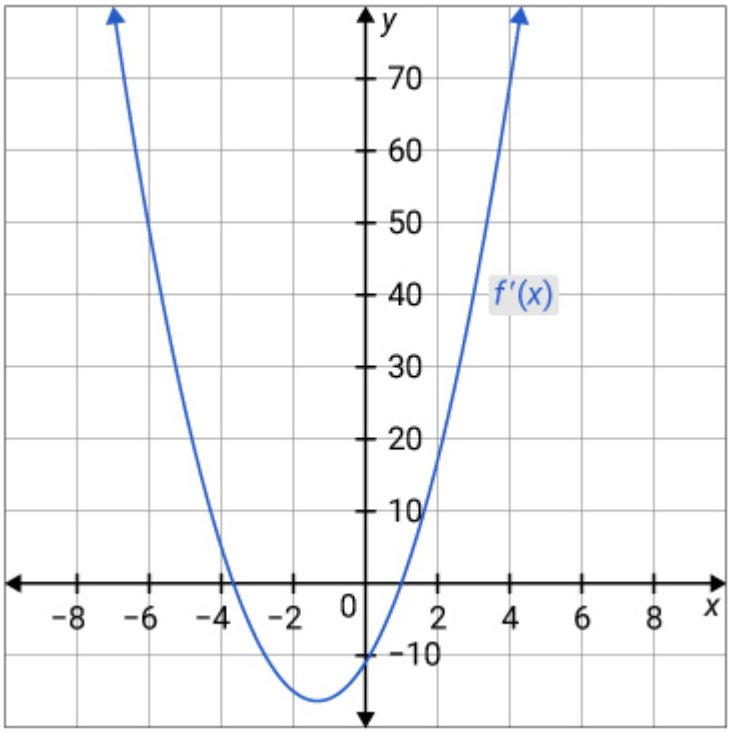
QUESTION 14

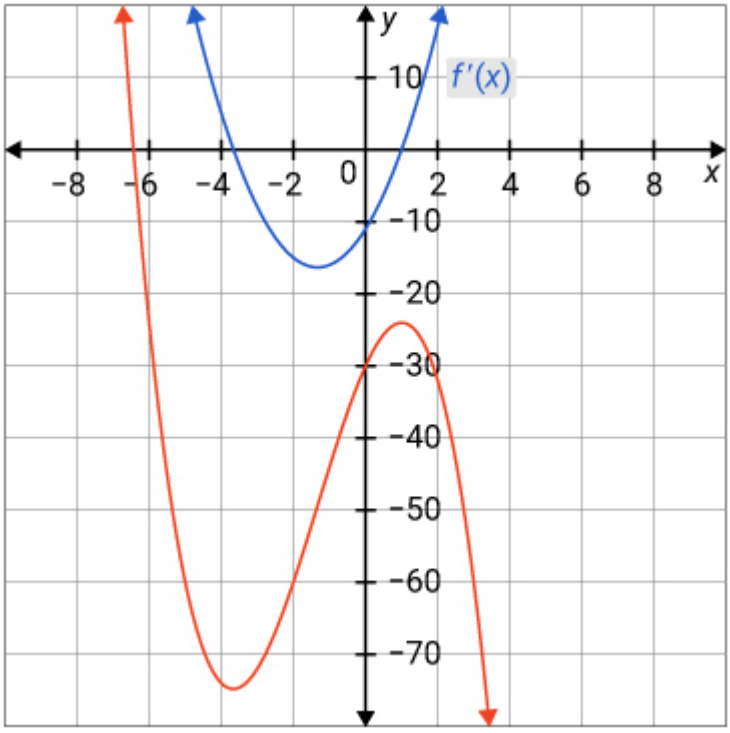
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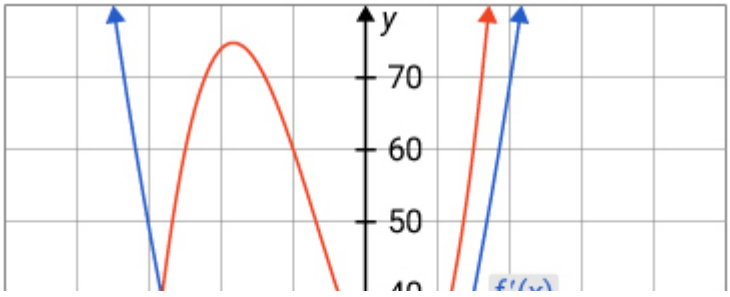
Given the graph of the derivative

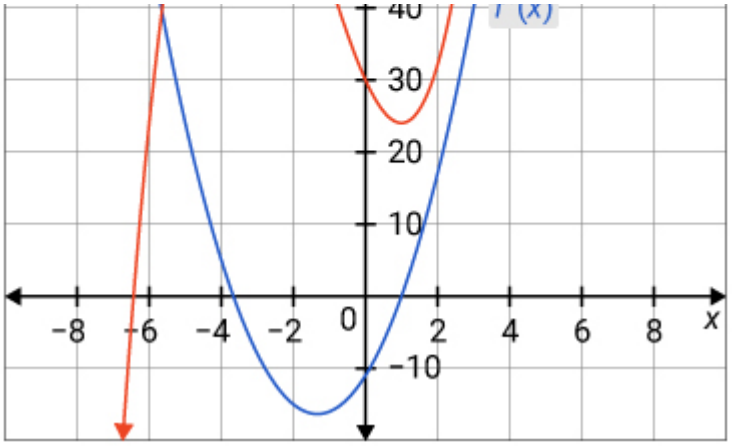
$f'(x)$

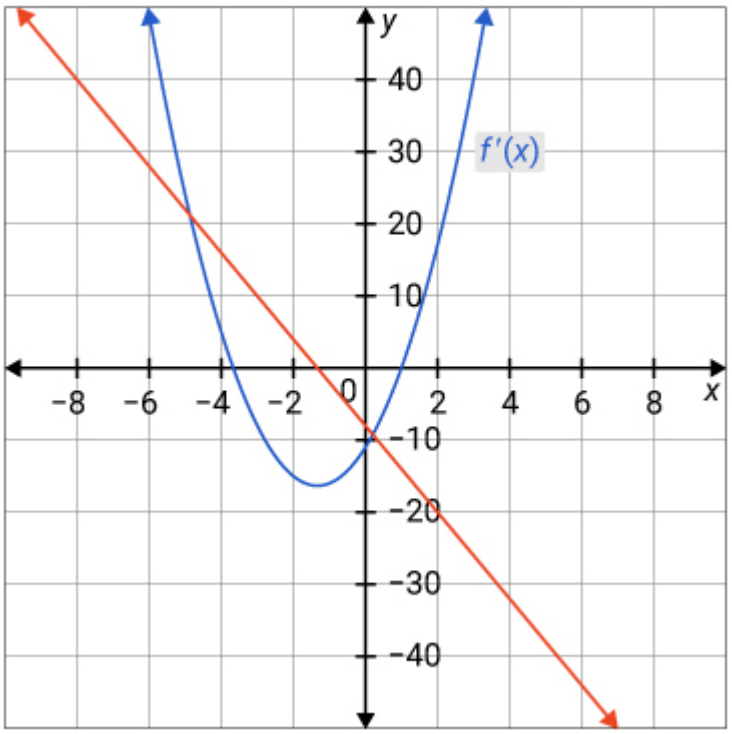
, which could be a reasonable graph of the original function $f(x)$?

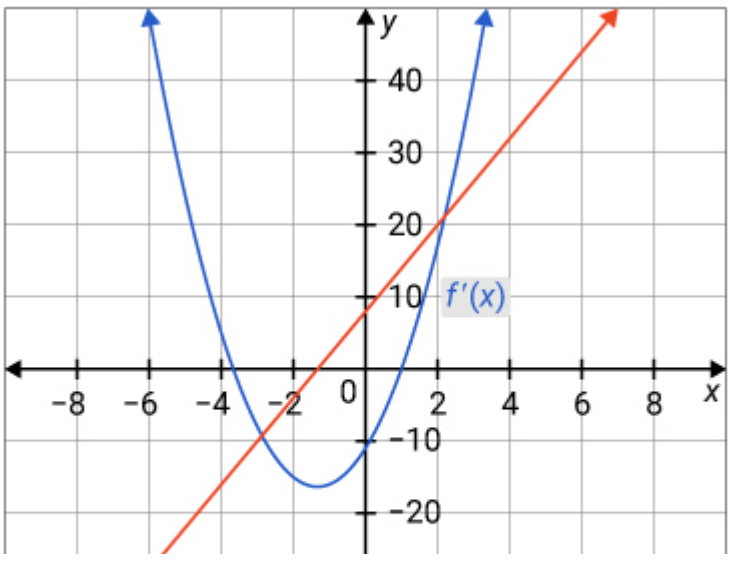


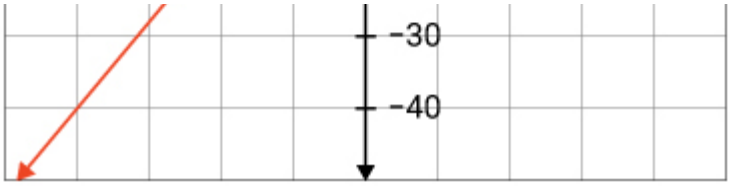





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y
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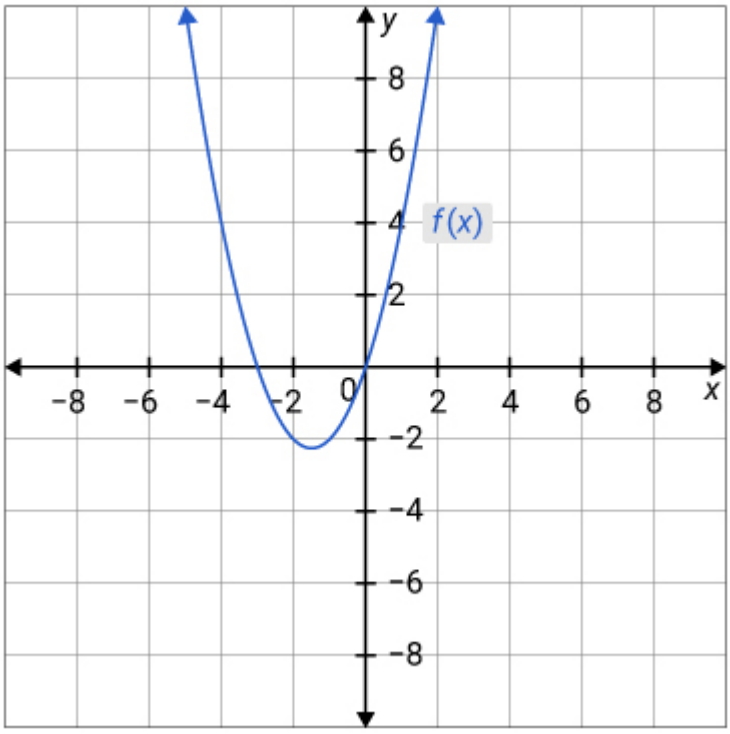

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f′(x)
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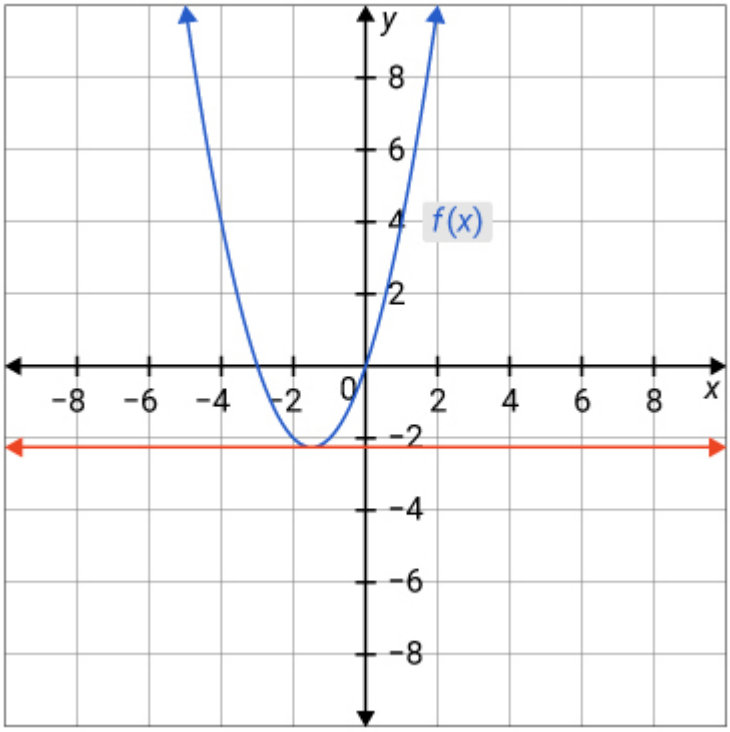


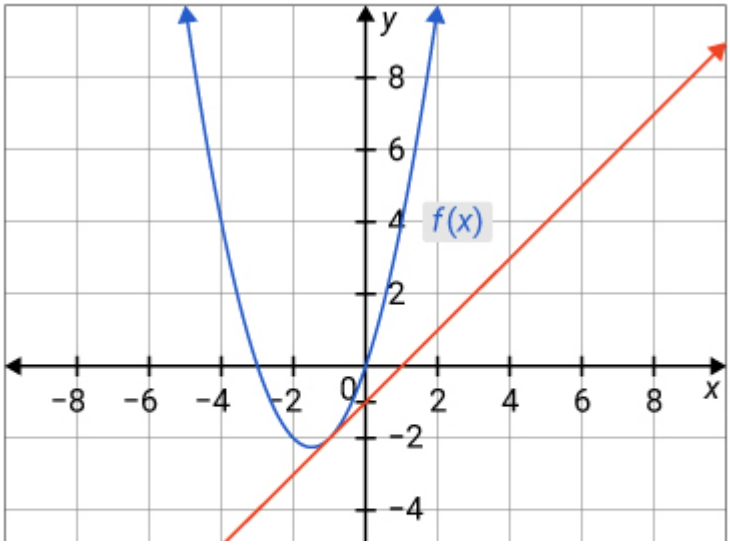
QUESTION 15

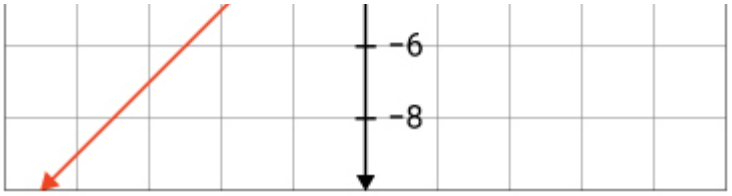
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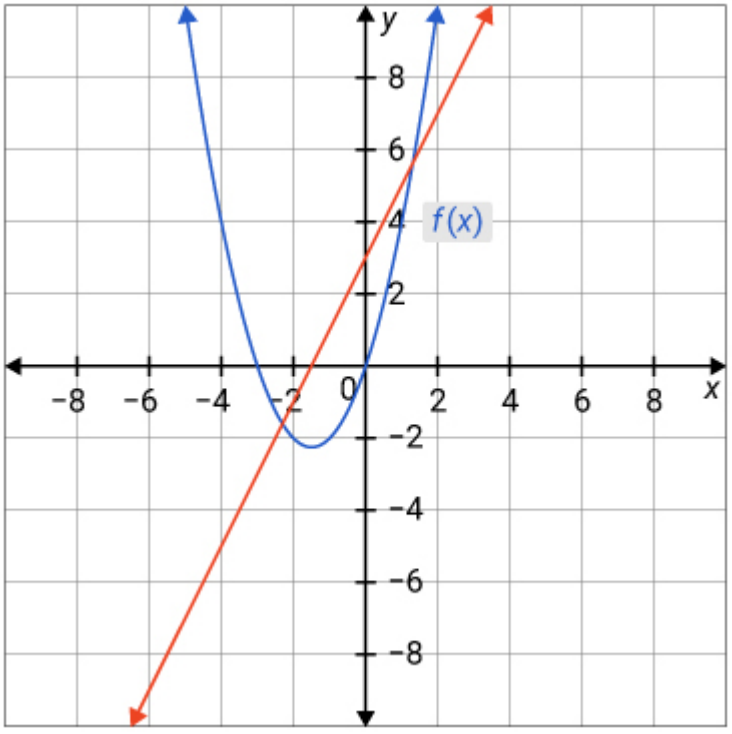
Given the following graph of $f(x)$, which could be a reasonable graph of $f(x)$ and the derivative of the function, $f'(x)$?

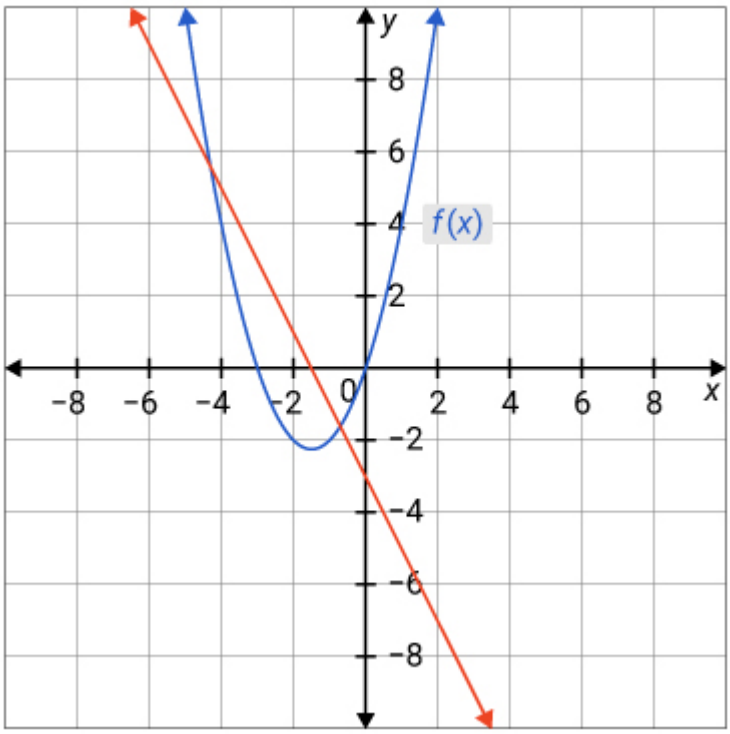



y
8
6
4
2
f(x)
−8
−6
−4
−2
0
2
4
6
8
x
−2
−4
−6
−8


y
8
6
4
2
f(x)
−8
−6
−4
−2
0
2
4
6
8
x
−2
−4


-6
-8


y
8
6
4
2
f(x)
-8
-6
-4
-2
0
2
4
6
8
x
-2
-4
-6
-8


y
8
6
4
2
f(x)
−8
−6
−4
−2
0
2
4
6
8
x
−2
−4
−6
−8