

~~MATH 105 COLLEGE ALGEBRA (MATH105.2) - TAKE ASSESSMENT: EXAM 2~~ **Take Assessment: Exam 2**~~Name Exam 2~~**Instructions**~~Multiple Attempts This Test allows 2 attempts. This is attempt number 2.~~~~Force Completion This Test can be saved and resumed later.~~**Question Completion Status:****Question 1****5 points** [Save](#)**Find the domain of the function.**

$$f(x) = \sqrt{11 - x}$$

- $\{x|x \leq 11\}$
- $\{x|x \neq \sqrt{11}\}$
- $\{x|x \neq 11\}$
- $\{x|x \leq \sqrt{11}\}$

Question 2**5 points** [Save](#)**For the given functions f and g , find the requested function and state its domain.**

$$f(x) = 3x^3 - 1; g(x) = 2x^2 + 3$$

Find $f \cdot g$.

- $(f \cdot g)(x) = 6x^6 + 9x^3 - 2x^2 - 3$; all real numbers
- $(f \cdot g)(x) = 6x^5 + 9x^3 - 2x^2 - 3$; $\{x|x \neq 0\}$
- $(f \cdot g)(x) = 3x^3 + 2x^2 - 3$; all real numbers
- $(f \cdot g)(x) = 6x^5 + 9x^3 - 2x^2 - 3$; all real numbers

Question 3**5 points** [Save](#)**Determine algebraically whether the function is even, odd, or neither.**

$$f(x) = \sqrt[3]{x}$$

- even
- odd
- neither

Question 4**5 points** [Save](#)**Determine algebraically whether the function is even, odd, or neither.**

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

- even
 odd
 neither

Question 5

5 points [Save](#)

Determine algebraically whether the function is even, odd, or neither.

$$f(x) = 2x^3$$

- even
 odd
 neither

Question 6

5 points [Save](#)

For the given functions f and g , find the requested function and state its domain.

$$f(x) = \sqrt{x}; g(x) = 5x - 3$$

Find $\frac{f}{g}$.

- $\left(\frac{f}{g}\right)(x) = \frac{5x - 3}{\sqrt{x}}; \{x|x \geq 0\}$
 $\left(\frac{f}{g}\right)(x) = \frac{\sqrt{x}}{5x - 3}; \{x|x \neq \frac{3}{5}\}$
 $\left(\frac{f}{g}\right)(x) = \frac{\sqrt{x}}{5x - 3}; \{x|x \geq 0, x \neq \frac{3}{5}\}$
 $\left(\frac{f}{g}\right)(x) = \frac{\sqrt{x}}{5x - 3}; \{x|x \neq 0\}$

Question 7

5 points [Save](#)

Find the average rate of change for the function between the given values.

$$f(x) = \frac{3}{x - 2}; \text{ from } 4 \text{ to } 7$$

- 7
 $-\frac{3}{10}$
 2
 $\frac{1}{3}$

Question 8

5 points [Save](#)

Determine whether the function is symmetric with respect to the y -axis, symmetric with respect to the x -axis, symmetric with respect to the origin, or none of these.

$$y = 6x^4 + 5x - 7$$

- x-axis, y-axis, origin
 origin only
 x-axis only
 none of these

Question 9

5 points [Save](#)

Solve the problem.

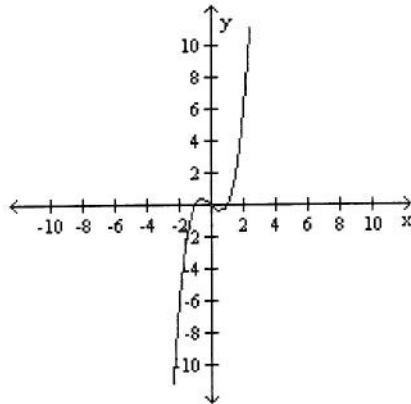
If $f(x) = 4x^3 + 7x^2 - x + C$ and $f(2) = 1$, what is the value of C ?

- $C = 7$
 $C = 11$
 $C = 63$
 $C = -57$

Question 10

5 points [Save](#)

List the intercepts of the graph. Tell whether the graph is symmetric with respect to the x-axis, y-axis, origin, or none of these.



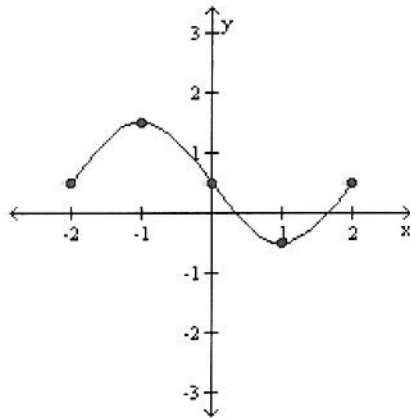
- $(-1, 0), (0, 0), (1, 0)$; symmetric to origin, x-axis, and y-axis
 $(-1, 0), (0, 0), (1, 0)$; symmetric to origin
 $(-1, 0), (0, 0), (1, 0)$; symmetric to y-axis
 $(-1, 0), (0, 0), (1, 0)$; symmetric to x-axis

Question 11

5 points [Save](#)

The graph of a function is given. Determine whether the function is increasing, decreasing, or constant on the given interval.

$(-2, -1)$



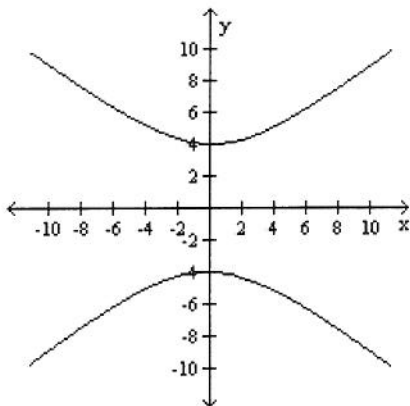
- decreasing
- increasing
- constant

Question 12

5 points

[Save](#)

List the intercepts of the graph. Tell whether the graph is symmetric with respect to the x-axis, y-axis, origin, or none of these.



- (0, 4) and (0, -4); symmetric to x-axis and y-axis
- (0, 4) and (0, -4); symmetric to origin
- (0, 4) and (0, -4); symmetric to x-axis, y-axis, and origin
- (0, 4) and (0, -4); symmetric to y-axis

Question 13

5 points

[Save](#)

Determine whether the equation is a function.

$$7x + x^2 + 56 = y$$

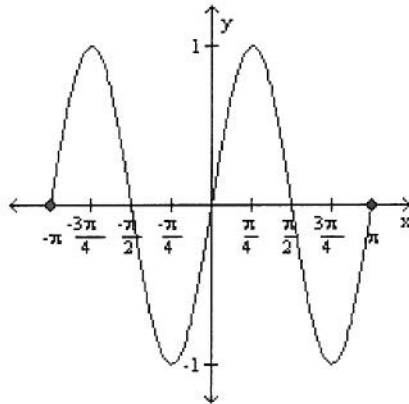
- function
- not a function

Question 14

5 points

[Save](#)

Determine whether the graph is that of a function. If it is, use the graph to find its domain and range, the intercepts, if any, and any symmetry with respect to the x-axis, the y-axis, or the origin.



- function
 domain: $\{x|-1 \leq x \leq 1\}$
 range: $\{y|-\pi \leq y \leq \pi\}$
 intercepts: $(-\pi, 0)$, $(-\frac{\pi}{2}, 0)$, $(0, 0)$, $(\frac{\pi}{2}, 0)$, $(\pi, 0)$
 symmetry: none
- function
 domain: $\{x|-\pi \leq x \leq \pi\}$
 range: $\{y|-1 \leq y \leq 1\}$
 intercepts: $(-\pi, 0)$, $(-\frac{\pi}{2}, 0)$, $(0, 0)$, $(\frac{\pi}{2}, 0)$, $(\pi, 0)$
 symmetry: origin
- function
 domain: all real numbers
 range: $\{y|-1 \leq y \leq 1\}$
 intercepts: $(-\pi, 0)$, $(-\frac{\pi}{2}, 0)$, $(0, 0)$, $(\frac{\pi}{2}, 0)$, $(\pi, 0)$
 symmetry: origin
- not a function

Question 15

5 points

[Save](#)

For the given functions f and g , find the requested function and state its domain.

$$f(x) = \sqrt{x+11}; g(x) = \frac{3}{x}$$

Find $f \cdot g$.

- $(f \cdot g)(x) = \frac{3\sqrt{x+11}}{x}; \{x|x \geq -11, x \neq 0\}$
- $(f \cdot g)(x) = \frac{\sqrt{3x+33}}{x}; \{x|x \geq -11, x \neq 0\}$
- $(f \cdot g)(x) = \sqrt{\frac{14}{x}}; \{x|x \neq 0\}$

$(f \cdot g)(x) = \sqrt{\frac{3x + 33}{x}} ; \{x|x \geq -11, x \neq 0\}$

Question 16

5 points

[Save](#)

Solve the problem.

The monthly payment p on a mortgage varies directly with the amount borrowed B . If the monthly payment on a 30-year mortgage is \$7.30 for every \$1000 borrowed, find a linear function that relates the monthly payment p to the amount borrowed B for a mortgage with the same terms. Then find the monthly payment p when the amount borrowed is \$194,000.

- $p = \frac{B}{1000} ; \$0.02$
- $p = \frac{B}{219} ; \$885.84$
- $p = \frac{B}{30} ; \$6466.67$
- $p = 0.0073B ; \$1416.20$

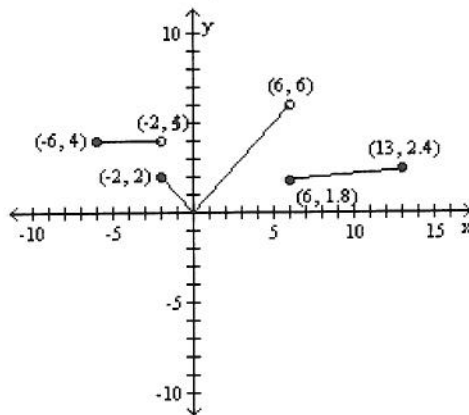
Question 17

5 points

[Save](#)

Based on the graph, find the range of $y = f(x)$.

$$f(x) = \begin{cases} 4 & \text{if } -6 \leq x < -2 \\ |x| & \text{if } -2 \leq x < 6 \\ \sqrt[3]{x} & \text{if } 6 \leq x \leq 13 \end{cases}$$



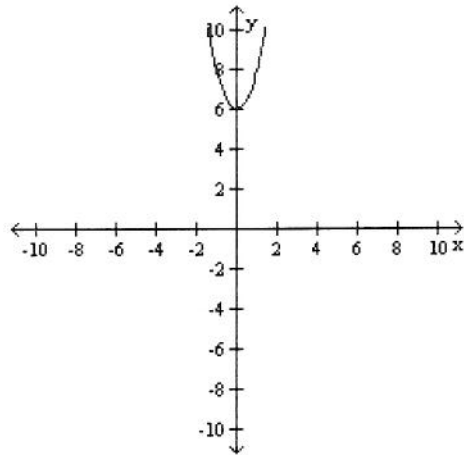
- $[0, 6]$
- $[0, 6)$
- $[0, \sqrt[3]{13}]$
- $[0, \infty)$

Question 18

5 points

[Save](#)

List the intercepts of the graph. Tell whether the graph is symmetric with respect to the x-axis, y-axis, origin, or none of these.



- (0, 6); symmetric to y-axis
- (0, 6); no symmetry
- (0, 6); symmetric to origin
- (0, 6); symmetric to x-axis