📖 Take Assessment: Exam 2

Name   Exam 2

Instructions

Multiple Attempts   This Test allows 2 attempts. This is attempt number 1.

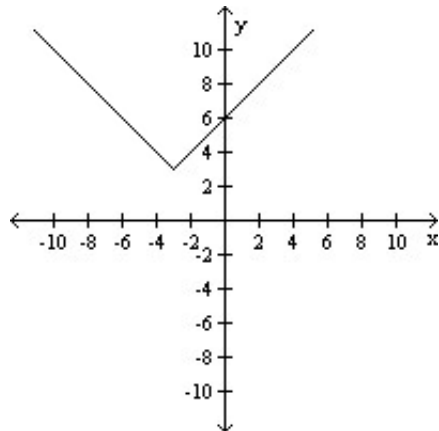**Force Completion**   This Test can be saved and resumed later.

▼ **Question Completion Status:**

Question 1   **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); symmetric to origin

○ (0, 6); no symmetry

○ (0, 6); symmetric to x-axis

Question 2   **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.
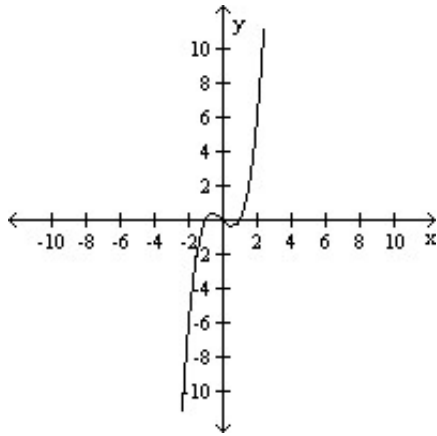
○ (-1, 0), (0, 0), (1, 0); symmetric to origin, x-axis, and y-axis

○ (-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 3   **5 points**   Save

For the given functions f and g, find the requested function and state its domain.
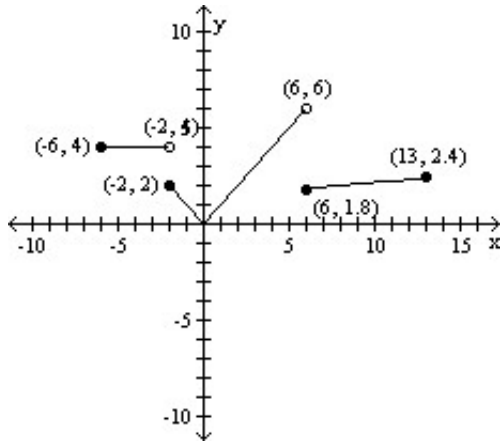
f(x) = 2x + 1; g(x) = 5x - 2
Find $\frac{f}{g}$.

○ $\left(\dfrac{f}{g}\right)(x) = \dfrac{5x - 2}{2x + 1}$; $\{x|x \neq \dfrac{2}{5}\}$

○ $\left(\dfrac{f}{g}\right)(x) = \dfrac{2x + 1}{5x - 2}$; $\{x|x \neq -\dfrac{1}{2}\}$

○ $\left(\dfrac{f}{g}\right)(x) = \dfrac{5x - 2}{2x + 1}$; $\{x|x \neq -\dfrac{1}{2}\}$

○ $\left(\dfrac{f}{g}\right)(x) = \dfrac{2x + 1}{5x - 2}$; $\{x|x \neq \dfrac{2}{5}\}$

Question 4   **5 points**   Save

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

$$f(x) = \begin{cases} 4 & \text{if } -6 \leq x < -2 \\ |x| & \text{if } -2 \leq x < 6 \\ \sqrt[3]{x} & \text{if } 6 \leq x \leq 13 \end{cases}$$
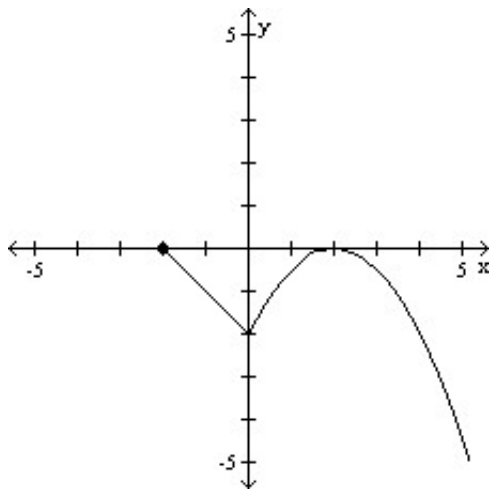
- [0, 6]
- [0, 6)
- $[0, 3\sqrt[3]{13}]$
- $[0, \infty)$

Question 5   **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|x ≤ 0}
  range: {y|y ≥ -2}
  intercepts: (-2, 0), (0, -2), (2, 0)
  symmetry: y-axis
- function
  domain: all real numbers
  range: all real numbers
  intercepts: (-2, 0), (0, -2), (2, 0)
  symmetry: none
- function

domain: {x|x ≥ -2}
range: {y|y ≤ 0}
intercepts: (-2, 0), (0, -2), (2, 0)
symmetry: none

○ not a function

Question 6   **5 points**   Save

Determine whether the relation represents a function. If it is a function, state the domain and range.

{(7.88, 13.78), (7.888, -13.8), ($\frac{3}{7}$, 0), (0.43, -7)}

○ function
domain: {13.78, -13.8, 0, -7}
range: {7.88, 7.888, $\frac{3}{7}$, 0.43}

○ function
domain: {7.88, 7.888, $\frac{3}{7}$, 0.43}

range: {13.78, -13.8, 0, -7}

○ not a function

Question 7   **5 points**   Save

Determine whether the relation represents a function. If it is a function, state the domain and range.

Bob Ms. Lee
Ann Mr. Bar
Dave

○ function
domain: {Ms. Lee, Mr. Bar}
range: {Bob, Ann, Dave}

○ function
domain: {Bob, Ann, Dave}
range: {Ms. Lee, Mr. Bar}

○ not a function

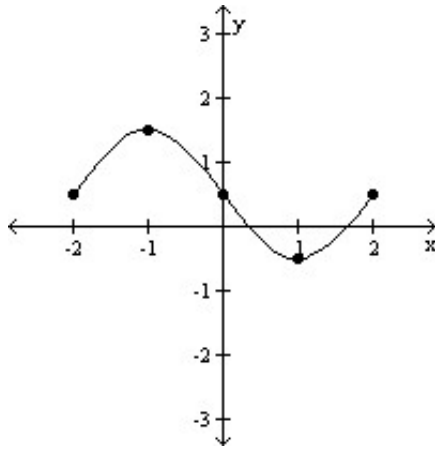## Question 8   **5 points**   Save

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 9   5 points   Save

Solve the problem.

Express the gross salary G of a person who earns $40 per hour as a function of the number x of hours worked.

- ○ G(x) = 40x
- ○ G(x) = 40x^2
- ○ G(x) = $\frac{40}{x}$
- ○ G(x) = 40 + x

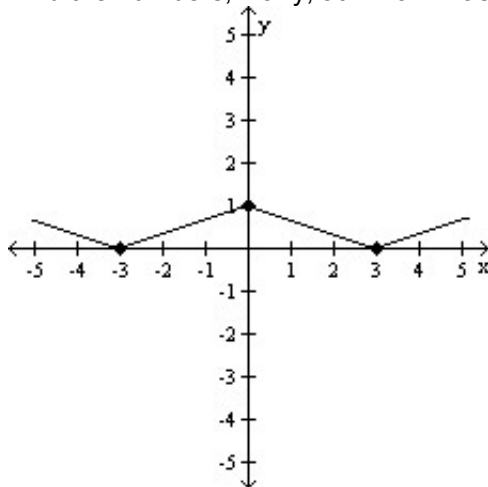## Question 10   5 points   Save

The graph of a function f is given. Use the graph to answer the question.

Find the numbers, if any, at which f has a local minimum. What are the local minima?

○ f has a local minimum at x = -3 and 3; the local minimum is 0

○ f has a local minimum at x = -3; the local minimum is 0

○ f has a local minimum at x = 0; the local minimum is 1

○ f has no local minimum

Question 11

5 points Save

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

$f(x) = 2x^3$

○ even

○ odd

○ neither

Question 12

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 $\dfrac{f}{g}$.

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

○ $\left(\dfrac{f}{g}\right)(x) = \dfrac{\sqrt{x}}{5x - 3}$; $\left\{x\Big|x \neq \dfrac{3}{5}\right\}$

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

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

Question 13

5 points Save

Solve the problem.

A wire of length 9x is bent into the shape of a square. Express the area A of the square as a function of x.

○ $A(x) = \dfrac{81}{8} x^2$

○ $A(x) = \dfrac{81}{16} x^2$

○ $A(x) = \dfrac{1}{16} x^2$

○

$$A(x) = \frac{9}{4}x^2$$

Question 14   **5 points**   Save

Answer the question about the given function.

Given the function $f(x) = x^2 + 3x - 40$, list the x-intercepts, if any, of the graph of f.

○ (8, 0), (-5, 0)

○ (8, 0), (5, 0)

○ (-8, 0), (5, 0)

○ (-8, 0), (1, 0)

Question 15   **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.

○ $p = \dfrac{B}{1000}$; $0.02

○ $p = \dfrac{B}{219}$; $885.84

○ $p = \dfrac{B}{30}$; $6466.67

○ p = 0.0073B; $1416.20

Question 16   **5 points**   Save

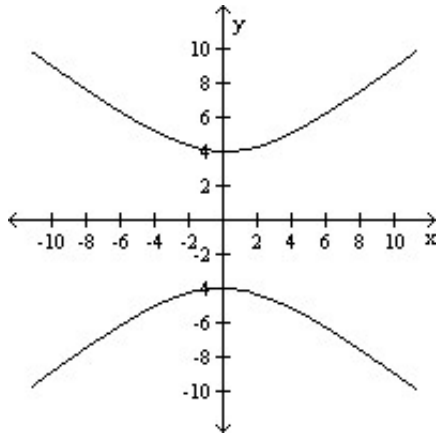**Determine whether the equation is a function.**

$x^2 - 4y^2 = 1$

○ function

○ not a function

Question 17   **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 18   **5 points**   Save

Find and simplify the difference quotient of f, $\dfrac{f(x + h) - f(x)}{h}$, $h \neq 0$, for the function.

f(x) = $\dfrac{1}{2x}$

- ○ $\dfrac{-1}{2x\,(x + h)}$
- ○ 0
- ○ $\dfrac{-1}{x\,(x + h)}$
- ○ $\dfrac{1}{2x}$

Question 19   **5 points**   Save

Locate any intercepts of the function.

$$f(x) = \begin{cases} 1 & \text{if } -3 \leq x < -4 \\ |x| & \text{if } -4 \leq x < 3 \\ \sqrt[3]{x} & \text{if } 3 \leq x \leq 28 \end{cases}$$

- ○ (0, 0), (0, 1)
- ○ (0, 0)
- ○ (0, 0), (1, 0)

○ none

Question 20

5 points   Save

Find the domain of the function.

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

○ {x|x ≤ 11}

○ {x|x ≠ $\sqrt{11}$}

○ {x|x ≠ 11}

○ {x|x ≤ $\sqrt{11}$}

Save   Submit