

# Bonus exam

⚠ This is a preview of the published version of the quiz

Started: Nov 21 at 5:04pm

## Quiz Instructions

Please click on "Proctoring" on the left panel of Canvas to start the exam.

This exam consists of 10 multiple choice questions.

The time limit of this exam is 60 minutes. Only one attempt is allowed.

You can use a non-graphing calculator and blank papers for scratch. Note cards are not allowed.

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### Question 1

2 pts

Which of the following interval notations describes the set

$$\{x|x > 5 \text{ and } x > 2\}$$

$[5, \infty)$

$(2, 5)$

$(2, \infty)$

$(5, \infty)$

### Question 2

2 pts

What points on the x-axis are 5 units from the point  $(1, 3)$  ?

$(-3, 0)$  and  $(5, 0)$

$(3, 0)$  and  $(0, 0)$

$(-3, 0)$  and  $(0, 0)$

- (3, 0) and (-1, 0)

**Question 3**

2 pts

Is the relation

$$R = \{(0, 0), (1, 1), (2, 0), (3, 1), (4, 0)\}$$

a function?

- True
- False

**Question 4**

2 pts

The graph of the function  $f(x) = x^2 - x$  passes through the point(s)

- (2,2) and (-1,0)
- (-2,0)
- (-1,0)
- (2,2)

**Question 5**

2 pts

Find the x-intercept(s) of the graph of the function

$$f(x) = \begin{cases} -\frac{1}{2}x - 1 & \text{if } x < 0 \\ x^2 - 1 & \text{if } x \geq 0 \end{cases}$$

$(-2, 0)$ ,  $(-1, 0)$ , and  $(1, 0)$

$(0, -1)$

$(-\frac{1}{2}, 0)$  and  $(1, 0)$

$(-2, 0)$  and  $(1, 0)$

### Question 6

2 pts

Let  $f(x) = 2x^2$ . Which of the following is the correct simplification of  $\frac{f(x+h) - f(x)}{h}$  ?

$4x + 2h$

$2$

$4x + h$

$2x + 2h$

### Question 7

2 pts

The domain of the function  $f(x) = \sqrt{x-1} + \sqrt{2-x}$  is

$[1, \infty)$

$(-\infty, 1] \cup [2, \infty)$

$(-\infty, 2]$

$[1, 2]$

**Question 8**

2 pts

The graph of the function  $f(x) = (x + 1)^2 - 2$  is obtained from the graph of the function  $g(x) = x^2$  by

- shifting to the right 1 unit, then shifting down 2 units
- shifting to the left 1 unit, then shifting up 2 units
- shifting to the right 1 unit, then shifting up 2 units
- shifting to the left 1 unit, then shifting down 2 units

**Question 9**

2 pts

A function  $f$  takes a real number  $x$  and performs the following 4 steps in the order given:

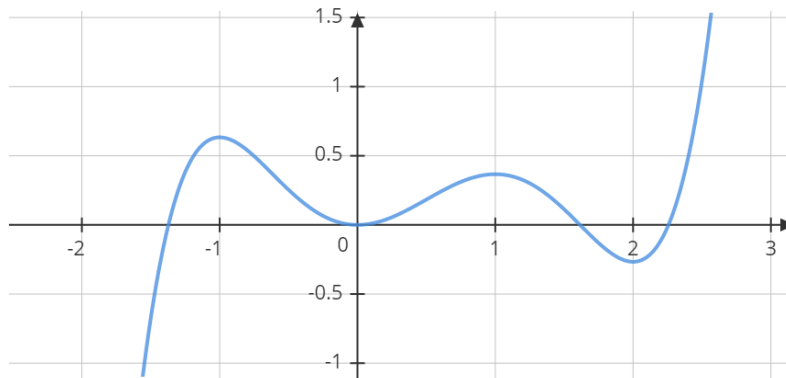
- (1) make  $x$  the denominator of a fraction with numerator 2;
- (2) square the result;
- (3) add 1;
- (4) take the square root.

Determine the correct expression of  $f(x)$ .

- $\sqrt{\frac{4}{x^2} + 1}$
- $\sqrt{\frac{5}{x^2}}$
- $\sqrt{\frac{2}{x^2} + 1}$
- $\sqrt{\frac{2}{x^2 + 1}}$

**Question 10****2 pts**

The graph of a function  $f$  is given as follows.



Determine the largest interval where  $f$  is increasing.

- $(-\infty, -1] \cup [0, 1] \cup [2, \infty)$
- $[-1, 0] \cup [1, 2]$
- $(-\infty, -1] \cup [1, 2]$
- $(-\infty, -1] \cup [2, \infty)$

Quiz saved at 5:05pm

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