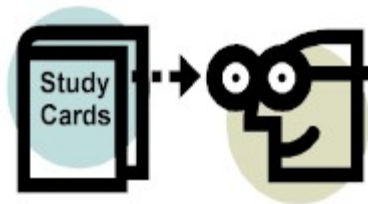


Study of Functions

(functions, domain, range, continuous, odd/even, inverse, algebra, composition)



Directions: Answer the following questions pertaining to the study of functions. You may use your graphing calculator to assist you in answering these questions. Upon completion of this review sheet, obtain a copy of the study card stack, **STUFUNC**, for your graphing calculator. Use the study cards to correct your review sheet. Be sure to read the explanations associated with any questions you may have not answered correctly.

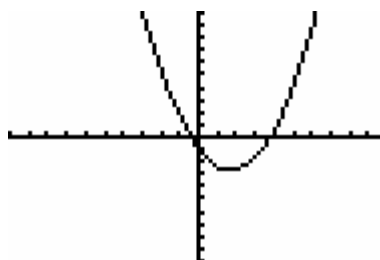
1. Study of Functions Title Screen

(When using the cards, hit 1 at this screen for a free answer to question 1.)

Choose the best answer:

2. Pertaining to the graph at the right:

1. the graph is a function
2. the graph is NOT a function
3. cannot be determined



2.

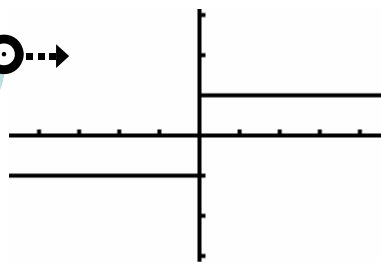
3. What is the domain of the function, $f(x) = \frac{1}{2x-6}$?

1. all real numbers
2. all real numbers excluding 3
3. all real numbers excluding -3
4. all real numbers excluding 3 and -3

3.

4. Pertaining to the graph at the right, what is the range of this function?

1. $\{y \mid y \text{ is any real number}\}$
2. $\{y \mid -1 < y < 1\}$
3. $\{y \mid y = -1 \text{ or } y = 1\}$



4.

5. What is the domain of the function, $f(x) = \sqrt{x+4}$?

1. all real numbers
2. all real numbers ≥ 4
3. all real numbers > -4
4. all real numbers ≥ -4

5.

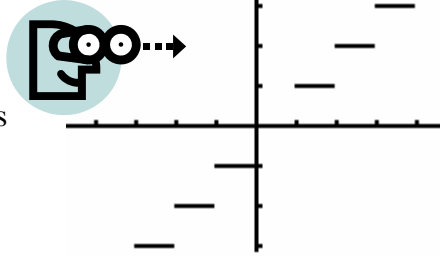
6. What is the domain of the function, $f(x) = \frac{4}{\sqrt{x-2}}$?

6.

1. all real numbers
2. all real numbers ≥ 2
3. all real numbers > 2
4. all real numbers excluding 2

7. Pertaining to the graph at the right:

1. the function is continuous
2. the function is NOT continuous
3. cannot be determined



7.

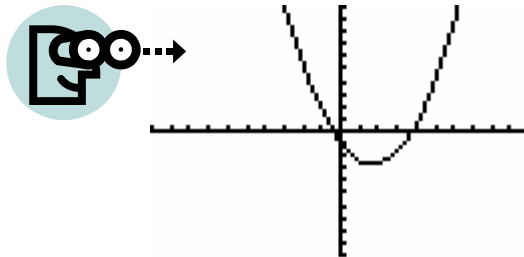
8. The function, $f(x) = \frac{1}{2}x^3$,

1. is odd
2. is even
3. is neither odd nor even

8.

9. Pertaining to the graph at the right, the inverse of this function is also a function.

1. True
2. False



9.

10. If $f(x) = 3x + 2$ and $g(x) = 2x$, then $(f + g)(x) =$

1. $3x + 2$
2. $5x + 2$
3. $6x + 2$
4. $6x + 4$

10.

11. If $f(x) = 2x - 1$ and $g(x) = x^2$, then $f(g(x)) =$

1. $(2x - 1)^2$
2. $(2x)^2 - 1$
3. $2x^2 - 1$
4. $x^2 + 2x - 1$

11.



12. When graphing split-definition functions (piecewise defined) on the TI-83+ or TI-84+, the domain restriction $-1 < x < 6$ would be entered as:

1. $Y1 = \dots / (-1 < x < 6)$
2. $Y1 = \dots / (-1 < x) (x < 6)$
3. $Y1 = \dots / ((-1 < x) \text{ and } (x < 6))$
4. The expression $-1 < x < 6$ cannot be entered on the graphing calculator.

12.

13. The inverse of a function is a reflection of the original function over the

1. x - axis
2. y - axis
3. identity line $y = x$

13.

14. The function, $f(x) = 3x^2 - 1$,

1. is odd.
2. is even.
3. is neither

14.

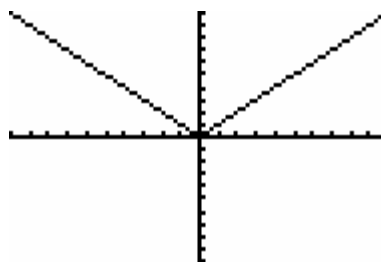
15. If $f(x) = x^2 - 2x - 1$, then $f(-2t) =$

1. 7
2. $-2t^2 + 4t - 1$
3. $4t^2 + 4t - 1$
4. $4t^2 - 4t - 1$

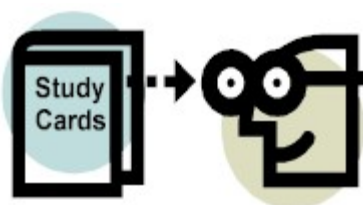
15.

16. The range of the absolute value function is

1. all real numbers.
2. all $y \geq 0$
3. all $y \leq 0$



16.



When you have finished this review sheet,
obtain the study card stack, **STUFUNC**, and check your answers.