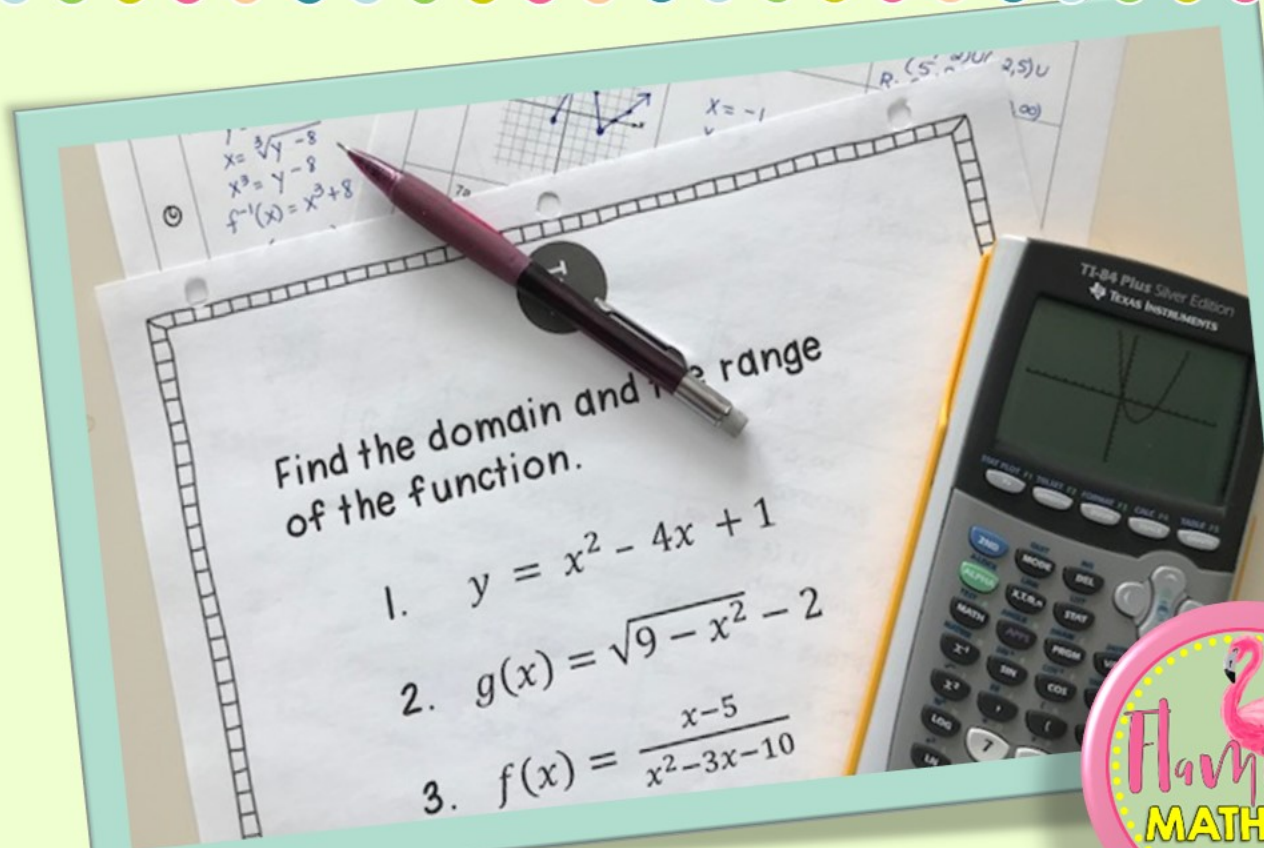


Precalculus Honors

Functions & Graphs Stations Activity



Task Cards



F

Find the domain and the range of the function.

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

2. $g(x) = \sqrt{9 - x^2} - 2$

3. $f(x) = \frac{x-5}{x^2-3x-10}$

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U

Graph the function.

$$f(x) = \begin{cases} 2, & x < -1 \\ -(x-1)^2 + 3, & -1 \leq x < 3 \\ x-4, & x \geq 3 \end{cases}$$

5. State the points of discontinuity.

6. Determine if they are removable or not removable.

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N

Find all (a) vertical asymptotes and (b) horizontal asymptotes of the graph of the function.

Answers must be written as equations.

7. $y = \frac{2x}{x-3}$

8. $y = \frac{4x}{\sqrt{x^2+4}}$

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G

Graph the function and state the intervals on which the function is (a) increasing, (b) decreasing.

Answers must be written in interval notation.

9. $f(x) = 3 - |x+2|$

10. $g(x) = \frac{x^2-4}{x^2-9}$

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Use a grapher to find all (a) relative maximum values, (b) relative minimum values, (c) the value(s) of x at which each relative extremum occurs.

Answers must be accurate to three decimal places.

11. $y = \frac{5x}{x^2+5}$

12. $y = x^3 - 4x$

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I

Graph the function and state whether the function is odd, even, or neither.

Justify your answer by using the algebraic tests for symmetry.

13. $y = \frac{2x}{e^x}$

14. $y = 2x^2 - 6|x|$

15. $y = \sin x - x^3$

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Find the inverse of the function.
Give the domain of f^{-1} , including any restrictions inherited from f .

16. $f(x) = \sqrt[3]{x-8}$

17. $g(x) = x^2 + 4; x \geq 0$



Find the following for each set of functions:

(a) $f(g(x))$, State the domain

(b) $g(f(x))$, State the domain

18. $f(x) = x^2 - 1; g(x) = \sqrt{x+3}$

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



Use your knowledge of the twelve basic functions to describe the transformations in each equation.

20. $f(x) = 1 - 2\sqrt{x+3}$

21. $g(x) = \frac{1}{2}\sin x - 4$

22. $h(x) = 3 - 2^x$

Transformations & Graphs Practice

Name _____

1.	2.	3.
4.	5.	6.
7a.	7b.	
8a.	8b.	
9a.	9b.	
10a.	10b.	
11a.	11b.	
11c.	12a.	
12b.	12c.	

13.	14.	15.
16.	17.	
18a.	18b.	
19a.	19b.	
20.	21.	22.