Algebra 1: **Function Assessment REVIEW**

Name _____

Period _____ Date _____

1. Given the following functions:

$$f(x) = -3x^2 + 8 \qquad h(x) = x^3 + x^2 - 4$$

Find: **Show your work**

a. $f(3) =$

b. $f(x) = -4$

c. $h(-5) =$

d. $h(Tim) =$

2. What is a function?

3. What is the definition of domain and range?

4. Given the function complete the table and state the domain and range:

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

| *x* | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| *f(x)* | | | | | | |

Domain: Range:

5. Which of the following are examples of a function? **Justify your answers**.

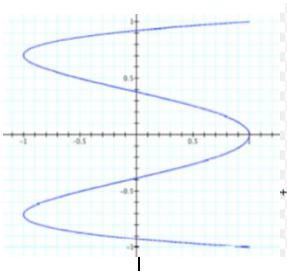
a. The assignment of students to their high school teachers.

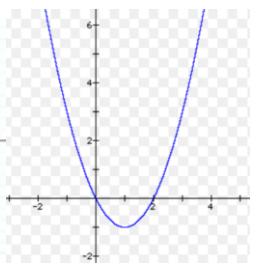
b. The assignment of children to their biological mothers.

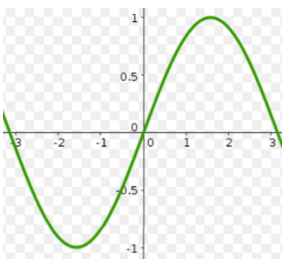
| x | f(x) |
|---|---|
| -2 | 1 |
| 0 | -7 |
| 4 | 3 |
| 1 | 0 |
| 2 | 6 |

| x | f(x) |
|---|---|
| -1 | 7 |
| 0 | 0 |
| 2 | 12 |
| 0 | 0 |
| 5 | -6 |

| x | f(x) |
|---|---|
| -7 | 7 |
| 4 | 4 |
| 2 | 3 |
| -23 | 0 |
| 4 | -6 |







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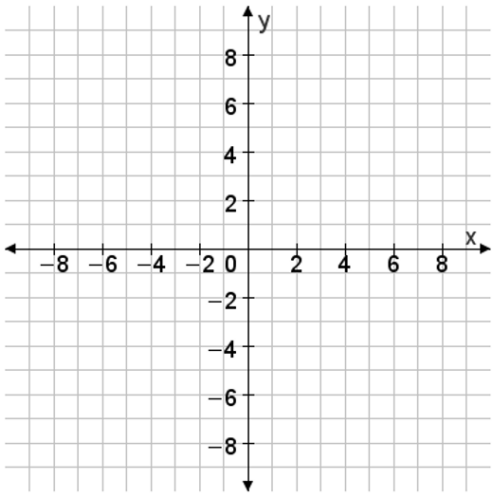
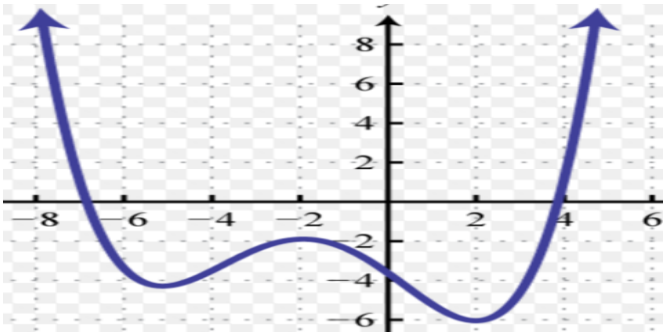
6. Given the function complete the table and graph the function:

$$f(x) = -2x^3 + 7x^2 - 7$$

| x | f(x) |
|---|---|
| -1 | |
| 0 | |
| 1 | |
| 2 | |
| 3 | |




7. Using the following graph complete the tables below:



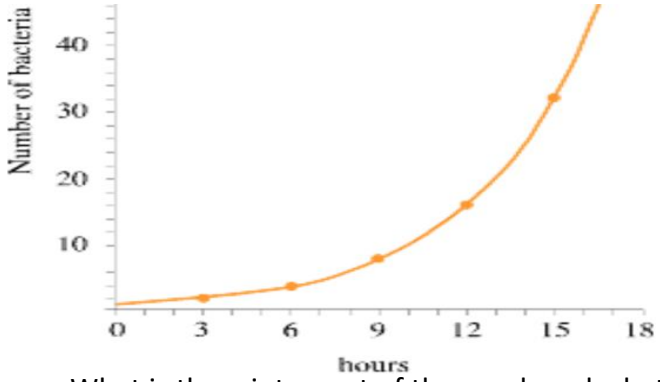

| **Global** Extrema | |
|---|---|
| Global Minimum | Global Maximum |
| | |

| **Local** Extrema | |
|---|---|
| Local Minimum | Local Maximum |
| | |

| Intercepts | |
|---|---|
| x-intercepts | y-intercept |
| | |

| Intervals | |
|---|---|
| Increasing | Decreasing |
| | |

8. The graph below shows the exponential growth of a single bacteria over time. Every three hours the bacteria doubles.




a. What is the y-intercept of the graph and what does it mean in the context of the problem?

b. Over what intervals is the function increasing and what does your answer mean within the context of the problem?

c. Over what intervals is the function decreasing and what does you answer mean within the context of the problem?

d. What is the domain of the function and what does your answer mean within the context of the problem?

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