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## Review: First 9 Weeks

1) Explain, in words, how you can convert a decimal (NON-repeating) into a fraction.
2) Explain, in words, how you can convert a REPEATING decimal into a fraction.
3) When looking at a decimal, how can you determine if it is rational or irrational? Include every possibility in your explanation.
4) When looking at a root (square root, cube root, etc.), how can you determine if it is rational or irrational?

For 5-8, match. Each choice might be used once, or more than once, or not at all.
5) $x^{2}=50$
6) $x^{2}=-50$
A) ZERO solutions
7) $x^{3}=50$
B) ONE solution (just a positive solution, or just a negative solution)
8) $x^{3}=-50$

Draw a graph to represent each situation.
9) Bob leaves home walking slowly to school. He then thinks he might be late, so he starts walking faster. He then realizes he's definitely going to be late, so he starts running quickly.
10) Bob leaves home walking to his friend's house. He gets halfway there before he sees that it's about to rain. He turns around to go back home and get his umbrella. He spends a long time at home looking for it. Finally, he finds it, then walks all the way to his friend's house.
11)


Function? $\qquad$
Why or why not? $\qquad$
12) a) Create an $x / y$ table that is not a function.

| $\mathbf{x}$ | $\mathbf{y}$ |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

b) Create an $x / y$ table that is a function, but not linear.

| $\mathbf{x}$ | $\mathbf{y}$ |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

c) Create an $x / y$ table that is a function and linear.

| $\mathbf{x}$ | $\mathbf{y}$ |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

13) Decide whether each is a function or not. Explain each choice.
a. Input: Person, Output: \# of apps currently on their smartphone
b. Input: Number; Output: Person who has that many apps on their smartphone

For 14-16, use the following functions:

$$
g(x)=(x-2)^{3} \quad h(x)=\frac{3 x+6}{3}-2
$$

14) Find $h(11)$.
15) Find $g(-1)$.
16) Find $h(1.5)$.
17) Linear or nonlinear? Why? $a(x)=\frac{1}{2} x-5$
18) Use the table to graph: $a(x)=\frac{1}{2} x-5$

| $\mathbf{x}$ | $\mathbf{a ( x )}$ |
| :---: | :---: |
| -6 |  |
| -4 |  |
| -2 |  |
| 0 |  |
| 2 |  |
| 4 |  |
| 6 |  |

For 19 - 20, find the slope using TWO DIFFERENT methods - the graph (drawing a slope triangle) and by using $\frac{y_{2}-y_{1}}{x_{2}-x_{1}}$.

19) A and C
a) From graph:
b) From formula:
20) B and C
a) From graph:
b) From formula:

Write an equation of the line in slope-intercept form.
21) line a
22) line $b$


Graph both lines on the same coordinate plane.

$$
\text { 23) } y=\frac{1}{5} x-7
$$

24) $y=-5 x$

