**Functions**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In a function, every input has exactly one output. The input is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_variable, which you control. The output is dependent on the input and is therefore called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ variable. The variable \_\_\_ represents the independent variable and \_\_\_ is the variable that represents the dependent variable.

1. Which of the following equations are functions?

$y=x^{2}$ $y^{2}=x$ $y=2^{x}$ $x=3$

1. Which of the following are tables of functions?

|  |  |
| --- | --- |
| x | y |
| -2 | 8 |
| -1 | 2 |
| 0 | 0 |
| 1 | 2 |
| 2 | 8 |
| x | y |
| 0 | 2 |
| 1 | 4 |
| 2 | 8 |
| 3 | 16 |
| 4 | 32 |
| x | y |
| 1 | 4 |
| 2 | 5 |
| 1 | 6 |
| 2 | 7 |
| 3 | 8 |

1. Which of the following graphs are functions?



1. What is function notation?
2. Evaluate $f\left(2\right)$for the function $f\left(x\right)=\frac{x-5}{2x}$
3. The function $h\left(x\right)=-16x^{2}+35x+6$ describes the height $h$ in feet of a tennis ball x seconds after it is shot straight up into the air from a pitching machine. Evaluate $h\left(1.5\right)$ and interpret the meaning of the point in the context of the problem.

Independent Practice

1. Which of the following equations are functions?

$y=x^{3}$ $y=xy$ $y=-1$ $y=\frac{1}{x}$

1. Which of the following are tables of functions?

|  |  |
| --- | --- |
| x | y |
| -2 | -4 |
| -1 | -1 |
| 0 | 0 |
| 1 | 1 |
| 2 | 4 |
| x | y |
| 1 | 1 |
| 1 | 2 |
| 0 | 3 |
| 2 | 4 |
| 4 | 5 |
| x | y |
| 1 | -1 |
| 2 | -3 |
| 3 | -5 |
| 4 | -7 |
| 5 | -9 |

1. Which of the following graphs are functions?

   

1. Evaluate $f\left(-1\right)$for the function $f\left(x\right)=\frac{4x+1}{3-x}$
2. Evaluate $f\left(5\right)$for the function $f\left(x\right)=\frac{-3}{2x}$
3. Evaluate $f\left(-2\right)$for the function $f\left(x\right)=\frac{7\left(x+1\right)}{2x-1}$

1. The function $h\left(x\right)=-16x^{2}+55x+2$ describes the height $h$ in feet of a football x seconds after it is kicked straight up into the air. Evaluate $h\left(3\right)$ and interpret the meaning of the point in the context of the problem.