Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Identifying and Evaluating Functions**

**Read each situation carefully and determine the independent variable and dependent variable.**

1. Circle or highlight the independent variable, and
2. Write a sentence giving the relationship between the two variables using either “depends on” or “is a function of.”
3. The amount of money Mary earns in one week and the number of hours she works in a week.
4. The size of a ball and the number of balls that will fit in a box.
5. The grade in Algebra I and the amount of time you spend doing your homework.
6. How long it takes you to do your Algebra I homework and the number of problems you were assigned.

**Determine whether each relation is a function. State yes or no and justify your response.**

5. 6. 7.

 8. 9. 10.



11. 12. 13.

14. 15. 16.

4

6

8

–2

 5

 3

–1

 4

 8

10

10

11

–8

–6

 2

0

4

8

9

17. {(2,4), (3,5), (4,6), (5,8)} 18. {(1,5), (1,7), (1,–5), (1,–7)}

19. {(–1,4), (0,4), (1,4), (2,4)} 20. {(2,5), (3,2), (5,0), (3,–2)}

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input** | 1 | 3 | 5 | 7 |
| **Output** | 4 | 2 | 0 | –2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***X*** | –1 | 0 | 2 | –1 |
| ***y*** | 1 | 0 | –1 | –3 |

21. 22.

|  |  |
| --- | --- |
| ***x*** | ***f(x)*** |
| 2 | 5 |
| 3 | 4 |
| 4 | 4 |
| 5 | 2 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| –2 | –5 |
| –1 | 6 |
| 1 | 4 |
| 11 | 6 |

|  |  |
| --- | --- |
| **Cost** | **Hour** |
| 1 | 25.00 |
| 2 | 30.75 |
| 3 | 36.50 |
| 4 | 42.25 |

23. 24. 25.

Evaluate each function.

Given: $f\left(x\right)=-3x+8 $ $g\left(x\right)=x^{2}-1$ $h\left(x\right)=\sqrt{x-6}$ $m\left(x\right)=\frac{3}{4}x+2$

26. $f(2)$ 27. $g(4)$ 28. $g(-2)$ 29. $h(15)$

30. $m(-8)$ 31. $m\left(\frac{1}{3}\right)$ 32. $h(g\left(4\right))$ 33. $f(k+1)$