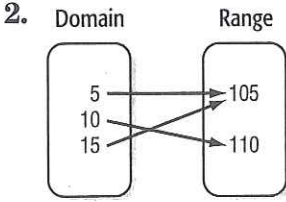
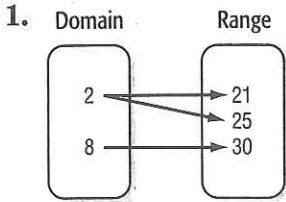


# 2-1

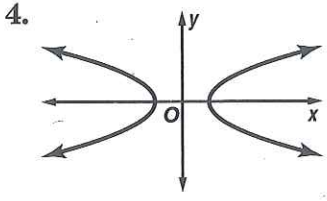
## Practice Relations and Functions

Determine whether each relation is a function. Write *yes* or *no*.



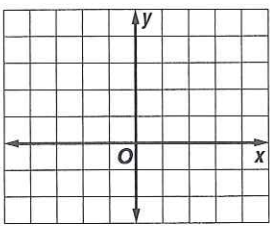
3.

x	y
-3	0
-1	-1
0	0
2	-2
3	4

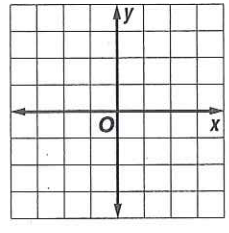


Graph each relation or equation and find the domain and range. Next determine if the relation is discrete or continuous. Then determine whether the relation or equation is a function.

5.  $\{(-4, -1), (4, 0), (0, 3), (2, 0)\}$



6.  $y = 2x - 1$



Find each value if  $f(x) = \frac{5}{x+2}$  and  $g(x) = -2x + 3$ .

7.  $f(3)$

8.  $f(-4)$

9.  $g\left(\frac{1}{2}\right)$

10.  $f(-2)$

11.  $g(-6)$

12.  $f(m - 2)$

13. **MUSIC** The ordered pairs (1, 16), (2, 16), (3, 32), (4, 32), and (5, 48) represent the cost of buying various numbers of CDs through a music club. Identify the domain and range of the relation. Is the relation discrete or continuous? Is the relation a function?

14. **COMPUTING** If a computer can do one calculation in 0.0000000015 second, then the function  $T(n) = 0.0000000015n$  gives the time required for the computer to do  $n$  calculations. How long would it take the computer to do 5 billion calculations?

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Lesson 2-1

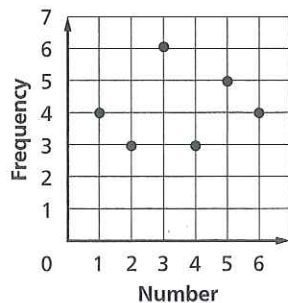
# 2-1 Word Problem Practice

## Relations and Functions

**1. PLANETS** The table below gives the mean distance from the Sun and orbital period of the nine major planets in our Solar System. Think of the mean distance as the domain and the orbital period as the range of a relation. Is this relation a function? Explain.

Planet	Mean Distance from Sun (AU)	Orbital Period (years)
Mercury	0.387	0.241
Venus	0.723	0.615
Earth	1.0	1.0
Mars	1.524	1.881
Jupiter	5.204	11.75
Saturn	9.582	29.5
Uranus	19.201	84
Neptune	30.047	165
Pluto	39.236	248

**2. PROBABILITY** Martha rolls a number cube several times and makes the frequency graph shown. Write a relation to represent this data.



**3. SCHOOL** The number of students  $N$  in Vassia's school is given by  $N = 120 + 30G$ , where  $G$  is the grade level. Is 285 in the range of this function?

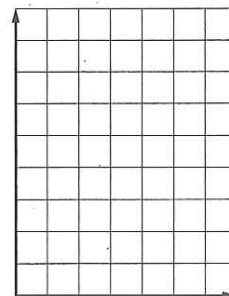
**4. FLOWERS** Anthony decides to decorate a ballroom with  $r = 3n + 20$  roses, where  $n$  is the number of dancers. It occurs to Anthony that the dancers always come in pairs. That is,  $n = 2p$ , where  $p$  is the number of pairs. What is  $r$  as a function of  $p$ ?

**SALES** For Exercises 5–7, use the following information.

Cool Athletics introduced the new Power Sneaker in one of their stores. The table shows the sales for the first 6 weeks.

Week	1	2	3	4	5	6
Pairs Sold	8	10	15	22	31	44

5. Graph the data.



6. Identify the domain and range.

7. Is the relation a function? Explain.