NAME_____DATE_____PER._____

FUNCTIONS

For each of the following relations, state the domain and the range. Tell whether the relation is a function.

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

   Domain: _____ Range: _____

   Function?   yes   no

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

   Domain: _____ Range: _____

   Function?   yes   no

For each of the following functions, state the range with the given domain. Write the function as a set of ordered pairs.

3. $y = 4x - 7$

   Domain: $\{-3, -1, 1, 2, 4\}$ Range: _____

   Ordered pairs: _____

4. $y = x^2 + 5$

   Domain: $\{-3, -1, 1, 2, 4\}$ Range: _____

   Ordered pairs: _____

Find the indicated value of f(x) or g(x) if f(x) = 3x − 4 and g(x) = x^2 + 2x − 1.

5. $f(3) =$	6. $f(-4) =$
7. $g(2) =$	8. $g(-1) =$

9. $f(2) - g(-3) =$

Write a function for the following situations.

10. Tim wants to know how much money he needs for gas. If he spends 5 cents per mile, write a function for the total amount of gas, *g,* as a function of the number of miles he travels, *m.*

11. Rose pays a monthly fee of $12 plus 10 cents per minute for her phone bill. Write a function for the total amount of her bill, *b*, as a function of the number of minutes, *m.*

12. Mrs. Barrett is planning to place a fence around her vegetable garden. The fencing cost $1.85 per yard and the delivery fee is $65.50. Write a function for the total cost.

13. Area of a circle as a function of the radius.

Find the surface area and volume of the following figures.

14. A cone with a radius of 5 cm and a slant height of 13 cm.

15. A cylinder with a radius of 4 in and a height of 10 in.

16. A rectangular prism with a length of 3 ft, a width of 7 ft, and a height of 2 ft.