

Name \_\_\_\_\_

- 1** Isaiah collects data from two different companies, each with four employees. The results of the study, based on each worker's age and salary, are listed in the tables below.

**Company 1**

Worker's Age in Years	Salary in Dollars
25	30,000
27	32,000
28	35,000
33	38,000

**Company 2**

Worker's Age in Years	Salary in Dollars
25	29,000
28	35,500
29	37,000
31	65,000

Which statement is true about these data?

- (1) The median salaries in both companies are greater than \$37,000.
- (2) The mean salary in company 1 is greater than the mean salary in company 2.
- (3) The salary range in company 2 is greater than the salary range in company 1.
- (4) The mean age of workers at company 1 is greater than the mean age of workers at company 2.

**2**

Which point is *not* on the graph represented by  $y = x^2 + 3x - 6$ ?

- (1) (-6,12)
- (2) (-4,-2)
- (3) (2,4)
- (4) (3,-6)

- 3** Which situation could be modeled by using a linear function?

- (1) a bank account balance that grows at a rate of 5% per year, compounded annually
- (2) a population of bacteria that doubles every 4.5 hours
- (3) the cost of cell phone service that charges a base amount plus 20 cents per minute
- (4) the concentration of medicine in a person's body that decays by a factor of one-third every hour

**4**

The table below shows the average diameter of a pupil in a person's eye as he or she grows older.

Age (years)	Average Pupil Diameter (mm)
20	4.7
30	4.3
40	3.9
50	3.5
60	3.1
70	2.7
80	2.3

What is the average rate of change, in millimeters per year, of a person's pupil diameter from age 20 to age 80?

- (1) 2.4
- (2) 0.04
- (3) -2.4
- (4) -0.04

**5**

The third term in an arithmetic sequence is 10 and the fifth term is 26. If the first term is  $a_1$ , which is an equation for the  $n$ th term of this sequence?

- (1)  $a_n = 8n + 10$
- (2)  $a_n = 8n - 14$
- (3)  $a_n = 16n + 10$
- (4)  $a_n = 16n - 38$

monday

tuesday

Name \_\_\_\_\_

**6** During the 2010 season, football player McGee’s earnings,  $m$ , were 0.005 million dollars more than those of his teammate Fitzpatrick’s earnings,  $f$ . The two players earned a total of 3.95 million dollars. Which system of equations could be used to determine the amount each player earned, in millions of dollars?

- (1)  $m + f = 3.95$   
 $m + 0.005 = f$
- (2)  $m - 3.95 = f$   
 $f + 0.005 = m$
- (3)  $f - 3.95 = m$   
 $m + 0.005 = f$
- (4)  $m + f = 3.95$   
 $f + 0.005 = m$

**7** Which equation represents a vertical line?

- (1)  $y = -x$                       (3)  $x = y$
- (2)  $y = 12$                       (4)  $x = 12$

**8** The table below shows the number of grams of carbohydrates,  $x$ , and the number of Calories,  $y$ , of six different foods.

Carbohydrates ( $x$ )	Calories ( $y$ )
8	120
9.5	138
10	147
6	88
7	108
4	62

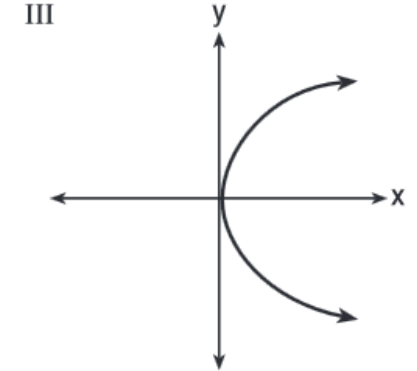
Which equation best represents the line of best fit for this set of data?

- (1)  $y = 15x$                       (3)  $y = 0.1x - 0.4$
- (2)  $y = 0.07x$                       (4)  $y = 14.1x + 5.8$

**9** Which representations are functions?

I

$x$	$y$
2	6
3	-12
4	7
5	5
2	-6



II  $\{(1,1), (2,1), (3,2), (4,3), (5,5), (6,8), (7,13)\}$       IV  $y = 2x + 1$

- (1) I and II                      (3) III, only
- (2) II and IV                      (4) IV, only

**10** For which value of  $P$  and  $W$  is  $P + W$  a rational number?

- (1)  $P = \frac{1}{\sqrt{3}}$  and  $W = \frac{1}{\sqrt{6}}$
- (2)  $P = \frac{1}{\sqrt{4}}$  and  $W = \frac{1}{\sqrt{9}}$
- (3)  $P = \frac{1}{\sqrt{6}}$  and  $W = \frac{1}{\sqrt{10}}$
- (4)  $P = \frac{1}{\sqrt{25}}$  and  $W = \frac{1}{\sqrt{2}}$