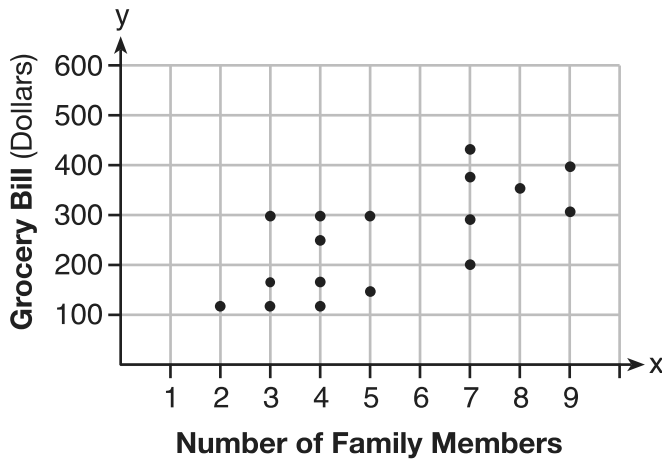


## Part I

Answer all 24 questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Record your answers on your separate answer sheet. [48]

- 1 The scatter plot below shows the relationship between the number of members in a family and the amount of the family's weekly grocery bill.

Use this space for computations.



The most appropriate prediction of the grocery bill for a family that consists of six members is

- (1) \$100 (3) \$400  
(2) \$300 (4) \$500
- 2 The function  $g(x)$  is defined as  $g(x) = -2x^2 + 3x$ . The value of  $g(-3)$  is
- (1)  $-27$  (3)  $27$   
(2)  $-9$  (4)  $45$
- 3 Which expression results in a rational number?
- (1)  $\sqrt{121} - \sqrt{21}$  (3)  $\sqrt{36} \div \sqrt{225}$   
(2)  $\sqrt{25} \cdot \sqrt{50}$  (4)  $3\sqrt{5} + 2\sqrt{5}$

Use this space for  
computations.

4 The math department needs to buy new textbooks and laptops for the computer science classroom. The textbooks cost \$116.00 each, and the laptops cost \$439.00 each. If the math department has \$6500 to spend and purchases 30 textbooks, how many laptops can they buy?

- (1) 6 (3) 11  
(2) 7 (4) 12

5 What is the solution to the equation  $\frac{3}{5}\left(x + \frac{4}{3}\right) = 1.04$ ?

- (1)  $3.0\overline{6}$  (3)  $-0.4\overline{8}$   
(2) 0.4 (4)  $-0.709\overline{3}$

6 The area of a rectangle is represented by  $3x^2 - 10x - 8$ . Which expression can also be used to represent the area of the same rectangle?

- (1)  $(3x + 2)(x - 4)$  (3)  $(3x + 4)(x - 2)$   
(2)  $(3x + 2)(x + 4)$  (4)  $(3x - 4)(x + 2)$

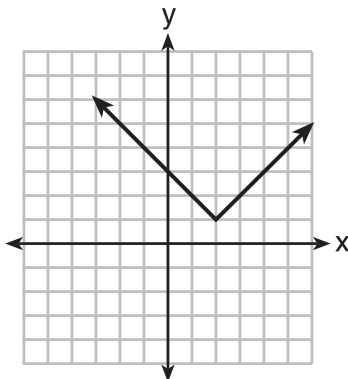
7 Which relation does *not* represent a function?

<b>x</b>	1	2	3	4	5	6
<b>y</b>	3.2	4	5.1	6	7.4	8.8

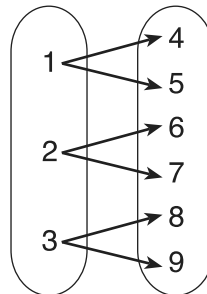
(1)

$$y = 3\sqrt{x+1} - 2$$

(3)



(2)



(4)

**Use this space for computations.**

8 Britney is solving a quadratic equation. Her first step is shown below.

$$\text{Problem: } 3x^2 - 8 - 10x = 3(2x + 3)$$

$$\text{Step 1: } 3x^2 - 10x - 8 = 6x + 9$$

Which two properties did Britney use to get to step 1?

- I. addition property of equality
- II. commutative property of addition
- III. multiplication property of equality
- IV. distributive property of multiplication over addition

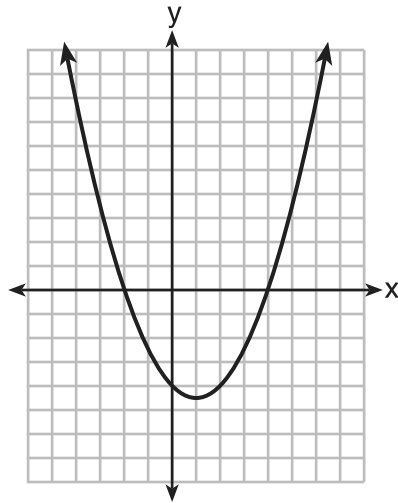
(1) I and III

(3) II and III

(2) I and IV

(4) II and IV

9 The graph of  $y = \frac{1}{2}x^2 - x - 4$  is shown below. The points  $A(-2,0)$ ,  $B(0,-4)$ , and  $C(4,0)$  lie on this graph.



Which of these points can determine the zeros of the equation  $y = \frac{1}{2}x^2 - x - 4$ ?

(1) A, only

(3) A and C, only

(2) B, only

(4) A, B, and C