

## 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]

Use this space for computations.

1 The expression  $w^4 - 36$  is equivalent to

- (1)  $(w^2 - 18)(w^2 - 18)$       (3)  $(w^2 - 6)(w^2 - 6)$   
(2)  $(w^2 + 18)(w^2 - 18)$       (4)  $(w^2 + 6)(w^2 - 6)$

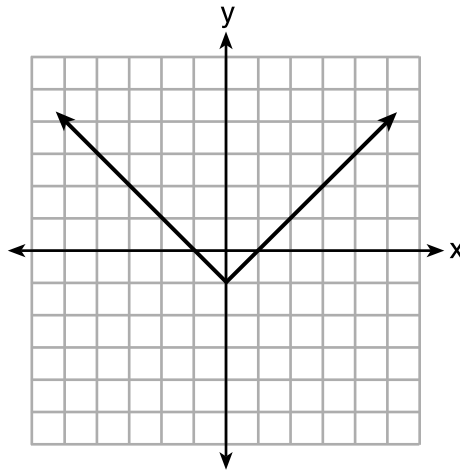
2 If  $f(x) = 4x + 5$ , what is the value of  $f(-3)$ ?

- (1)  $-2$       (3)  $17$   
(2)  $-7$       (4)  $4$

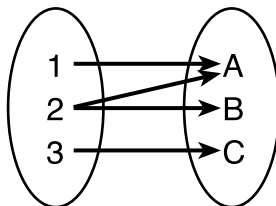
3 Which relation is *not* a function?

x	y
-10	-2
-6	2
-2	6
1	9
5	13

(1)



(3)



(4)

$$3x + 2y = 4$$

(2)

**Use this space for  
computations.**

4 Given:  $f(x) = (x - 2)^2 + 4$   
 $g(x) = (x - 5)^2 + 4$

When compared to the graph of  $f(x)$ , the graph of  $g(x)$  is

- (1) shifted 3 units to the left      (3) shifted 5 units to the left  
(2) shifted 3 units to the right    (4) shifted 5 units to the right

5 Students were asked to write  $6x^5 + 8x - 3x^3 + 7x^7$  in standard form.  
Shown below are four student responses.

Anne:  $7x^7 + 6x^5 - 3x^3 + 8x$   
Bob:  $-3x^3 + 6x^5 + 7x^7 + 8x$   
Carrie:  $8x + 7x^7 + 6x^5 - 3x^3$   
Dylan:  $8x - 3x^3 + 6x^5 + 7x^7$

Which student is correct?

- (1) Anne                                      (3) Carrie  
(2) Bob                                        (4) Dylan

6 The function  $f$  is shown in the table below.

<b>x</b>	<b>f(x)</b>
0	1
1	3
2	9
3	27

Which type of function best models the given data?

- (1) exponential growth function  
(2) exponential decay function  
(3) linear function with positive rate of change  
(4) linear function with negative rate of change