Use this space for computations.

20 The length of a rectangular patio is 7 feet more than its width, w. The area of a patio, $A(w)$, can be represented by the function

(1) $A(w) = w + 7$

(2) $A(w) = w^2 + 7w$

(3) $A(w) = 4w + 14$

(4) $A(w) = 4w^2 + 28w$

21 A dolphin jumps out of the water and then back into the water. His jump could be graphed on a set of axes where x represents time and y represents distance above or below sea level. The domain for this graph is best represented using a set of

(1) integers

(2) positive integers

(3) real numbers

(4) positive real numbers

22 Which system of linear equations has the same solution as the one shown below?

$$x - 4y = -10$$
$$x + y = 5$$

(1) $5x = 10$
$x + y = 5$

(2) $-5y = -5$
$x + y = 5$

(3) $-3x = -30$
$x + y = 5$

(4) $-5y = -5$
$x - 4y = -10$

23 Which interval represents the range of the function $h(x) = 2x^2 - 2x - 4$?

(1) $(0.5,\infty)$

(2) $(-4.5,\infty)$

(3) $[0.5,\infty)$

(4) $[-4.5,\infty)$

24 What is a common ratio of the geometric sequence whose first term is 5 and third term is 245?

(1) 7

(2) 49

(3) 120

(4) 240

Part II

Answer all 8 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [16]

25 If $g(x) = -4x^2 - 3x + 2$, determine $g(-2)$.