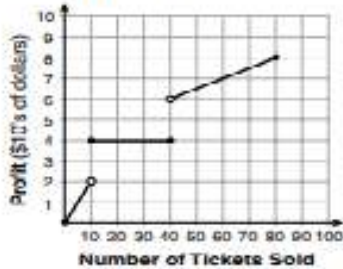


June 2017 Regents:

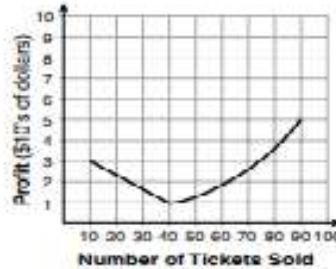
Answer all 24 questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Record your answers on your separate answer sheet. [46]

- 1 To keep track of his profits, the owner of a carnival booth decided to model his ticket sales on a graph. He found that his profits only declined when he sold between 10 and 40 tickets. Which graph could represent his profits?

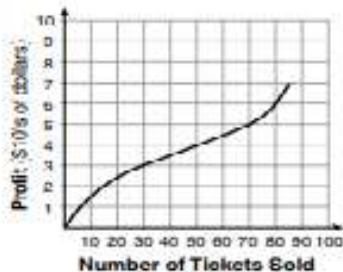
Use this space for computations.



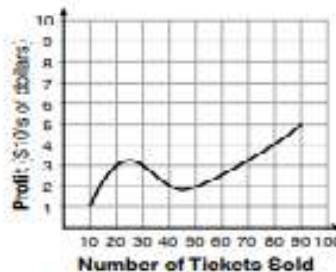
(1)



(3)



(2)



(4)

- 5 Lynn, Jude, and Anne were given the function $f(x) = -2x^2 + 32$, and they were asked to find $f(3)$. Lynn's answer was 14, Jude's answer was 4, and Anne's answer was ± 4 . Who is correct?

- (1) Lynn, only (3) Anne, only
 (2) Jude, only (4) Both Lynn and Jude

- 6 Which expression is equivalent to $16x^4 - 64$?

- (1) $(4x^2 - 8)^2$ (3) $(4x^2 + 8)(4x^2 - 8)$
 (2) $(8x^2 - 32)^2$ (4) $(8x^2 + 32)(8x^2 - 32)$

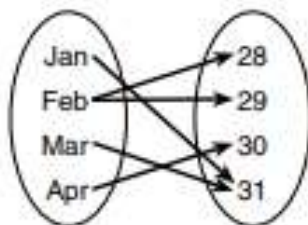
Use this space for computations.

8 What is the solution to the system of equations below?

$$y = 2x + 8$$
$$3(-2x + y) = 12$$

- (1) no solution (3) $(-1, 6)$
(2) infinite solutions (4) $(\frac{1}{2}, 9)$

9 A mapping is shown in the diagram below.



This mapping is

- (1) a function, because Feb has two outputs, 28 and 29
(2) a function, because two inputs, Jan and Mar, result in the output 31
(3) not a function, because Feb has two outputs, 28 and 29
(4) not a function, because two inputs, Jan and Mar, result in the output 31

10 Which polynomial function has zeros at -3 , 0 , and 4 ?

- (1) $f(x) = (x + 3)(x^2 + 4)$ (3) $f(x) = x(x + 3)(x - 4)$
(2) $f(x) = (x^2 - 3)(x - 4)$ (4) $f(x) = x(x - 3)(x + 4)$

11 Jordan works for a landscape company during his summer vacation. He is paid \$12 per hour for mowing lawns and \$14 per hour for planting gardens. He can work a maximum of 40 hours per week, and would like to earn at least \$250 this week. If m represents the number of hours mowing lawns and g represents the number of hours planting gardens, which system of inequalities could be used to represent the given conditions?

(1) $m + g \leq 40$

$12m + 14g \geq 250$

(2) $m + g \geq 40$

$12m + 14g \leq 250$

(3) $m + g \leq 40$

$12m + 14g \leq 250$

(4) $m + g \geq 40$

$12m + 14g \geq 250$

13 Which value would be a solution for x in the inequality $47 - 4x < 7$?

(1) -13

(2) -10

(3) 10

(4) 11

18 Given the function $f(n)$ defined by the following:

$$f(1) = 2$$

$$f(n) = -5f(n - 1) + 2$$

Which set could represent the range of the function?

(1) $\{2, 4, 6, 8, \dots\}$

(3) $\{-8, -42, -208, 1042, \dots\}$

(2) $\{2, -8, 42, -208, \dots\}$

(4) $\{-10, 50, -250, 1250, \dots\}$

19 An equation is given below:

$$4(x - 7) = 0.3(x + 2) + 2.11$$

The solution to the equation is

(1) 8.3

(3) 3

(2) 8.7

(4) -3

21 One characteristic of all linear functions is that they change by

(1) equal factors over equal intervals

(2) unequal factors over equal intervals

(3) equal differences over equal intervals

(4) unequal differences over equal intervals

22 What are the solutions to the equation $x^2 - 8x = 10$?

(1) $4 \pm \sqrt{10}$

(3) $-4 \pm \sqrt{10}$

(2) $4 \pm \sqrt{26}$

(4) $-4 \pm \sqrt{26}$

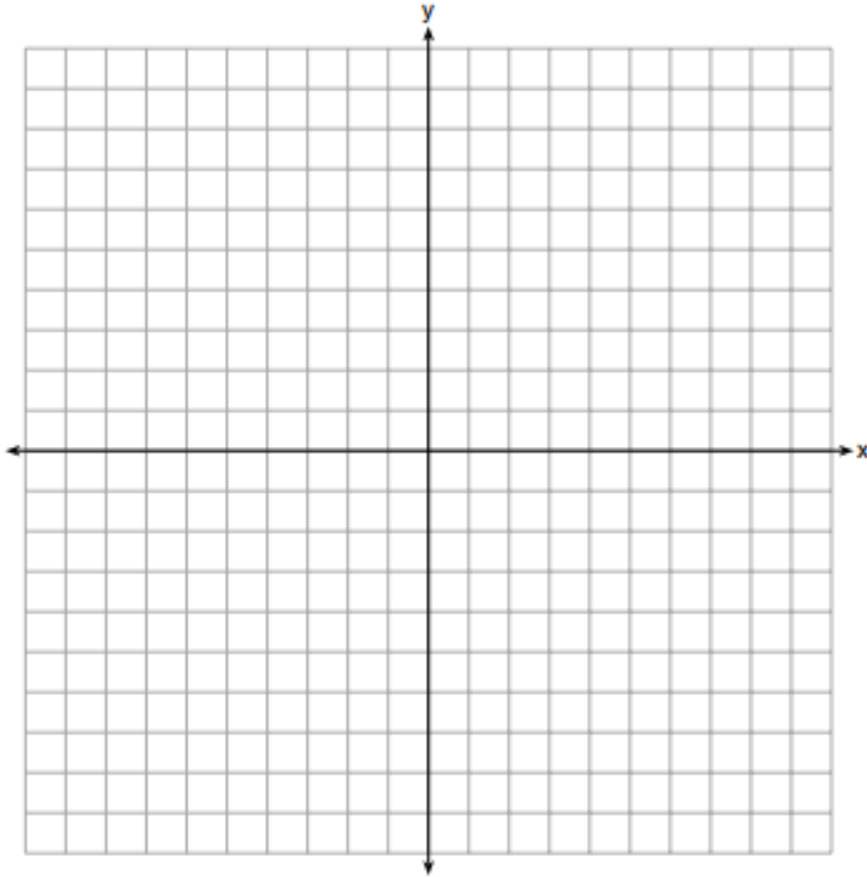
Part II

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 Express in simplest form: $(3x^2 + 4x - 8) - (-2x^2 + 4x + 2)$

27 State whether $7 - \sqrt{2}$ is rational or irrational. Explain your answer.

30 Graph the inequality $y + 4 < -2(x - 4)$ on the set of axes below.



31 If $f(x) = x^2$ and $g(x) = x$, determine the value(s) of x that satisfy the equation $f(x) = g(x)$.

33 The function $r(x)$ is defined by the expression $x^2 + 3x - 18$. Use factoring to determine the zeros of $r(x)$.

Name _____

2019 Easter Assignment