

Name: _____

Date: _____

Cloer's Summer Packet -- 2018

1) Rhonda deposited \$3000 in an account in the Merrick National Bank, earning 4.2% interest, compounded annually. She made no deposits or withdrawals. Write an equation that can be used to find B , her account balance after t years.

2) Express the product of $2x^2 + 7x - 10$ and $x + 5$ in standard form.

3) Each day Toni records the height of a plant for her science lab. Her data are shown in the table below.

Day (n)	1	2	3	4	5
Height (cm)	3.0	4.5	6.0	7.5	9.0

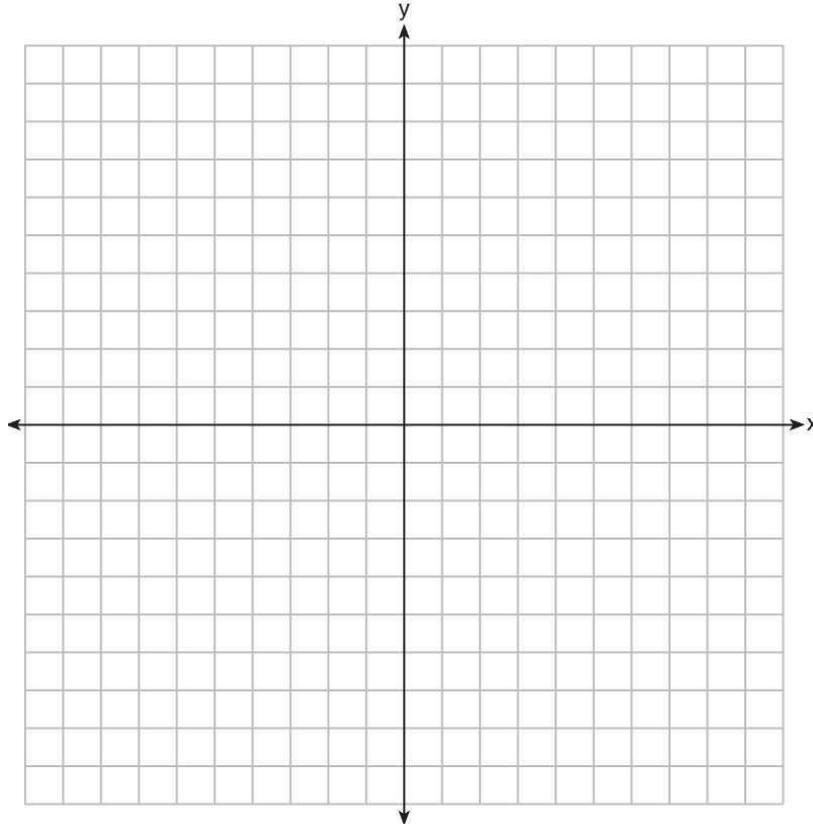
The plant continues to grow at a constant daily rate. Write an equation to represent $h(n)$, the height of the plant on the n th day.

4) When multiplying polynomials for a math assignment, Pat found the product to be $-4x + 8x^2 - 2x^3 + 5$. He then had to state the leading coefficient of this polynomial.

Pat wrote down -4 . Do you agree with Pat's answer? Explain your reasoning.

5) Is the sum of $3\sqrt{2}$ and $4\sqrt{2}$ rational or irrational? Explain your answer.

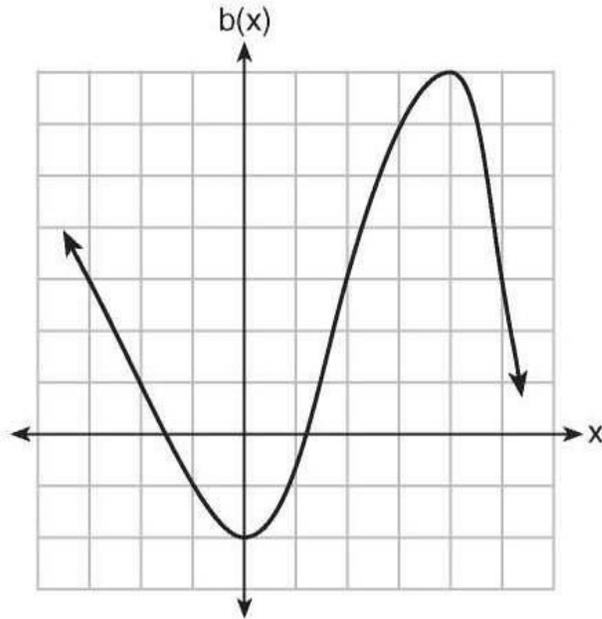
6) On the set of axes below, graph the inequality $2x + y > 1$.



7) Subtract $5x^2 + 2x - 11$ from $3x^2 + 8x - 7$. Express the result as a trinomial.

8) In attempting to solve the system of equations $y = 3x - 2$ and $6x - 2y = 4$, John graphed the two equations on his graphing calculator. Because he saw only one line, John wrote that the answer to the system is the empty set. Is he correct? Explain your answer.

9) Richard is asked to transform the graph of $b(x)$ below



The graph of $b(x)$ is transformed using the equation $h(x) = b(x - 2) - 3$. Describe how the graph of $b(x)$ changed to form the graph of $h(x)$.

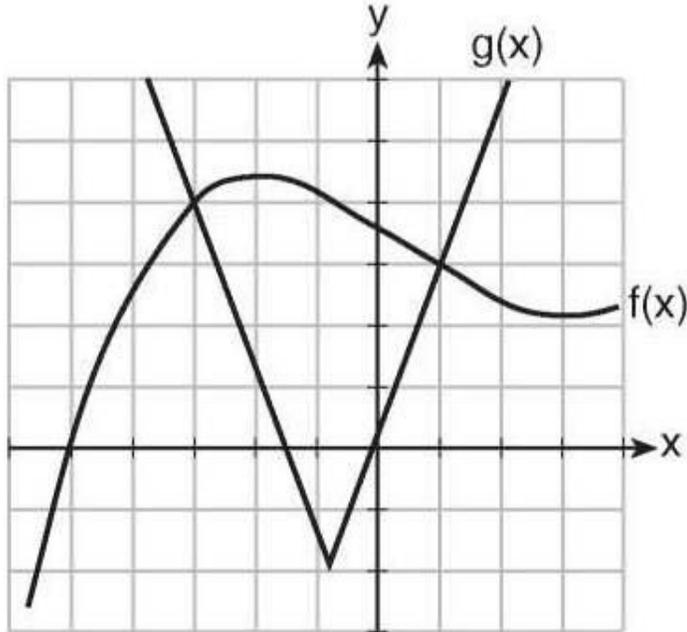
10) When solving the equation $4(3x^2 + 2) - 9 = 8x^2 + 7$, Emily wrote $4(3x^2 + 2) = 8x^2 + 16$ as her first step. Which property justifies Emily's first step?

- (1) addition property of equality
- (2) commutative property of addition
- (3) multiplication property of equality
- (4) distributive property of multiplication over addition

11) Officials in a town use a function, C , to analyze traffic patterns. $C(n)$ represents the rate of traffic through an intersection where n is the number of observed vehicles in a specified time interval. What would be the most appropriate domain for the function?

- (1) $\{\dots, -2, -1, 0, 1, 2, 3, \dots\}$
- (2) $\{2, 1, 0, 1, 2, 3\}$
- (3) $\{0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}\}$
- (4) $\{0, 1, 2, 3, \dots\}$

12) The graph below shows two functions, $f(x)$, $g(x)$. State all of value of x for which $f(x) = g(x)$



13) A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture each radio. If the cost of manufacturing r radios is given by the function $c(r) = 5.25r + 125$, then the value 5.25 best represents

- (1) the start-up cost
- (2) the profit earned from the sale of one radio
- (3) the amount spent to manufacture each radio
- (4) the average number of radios manufactured

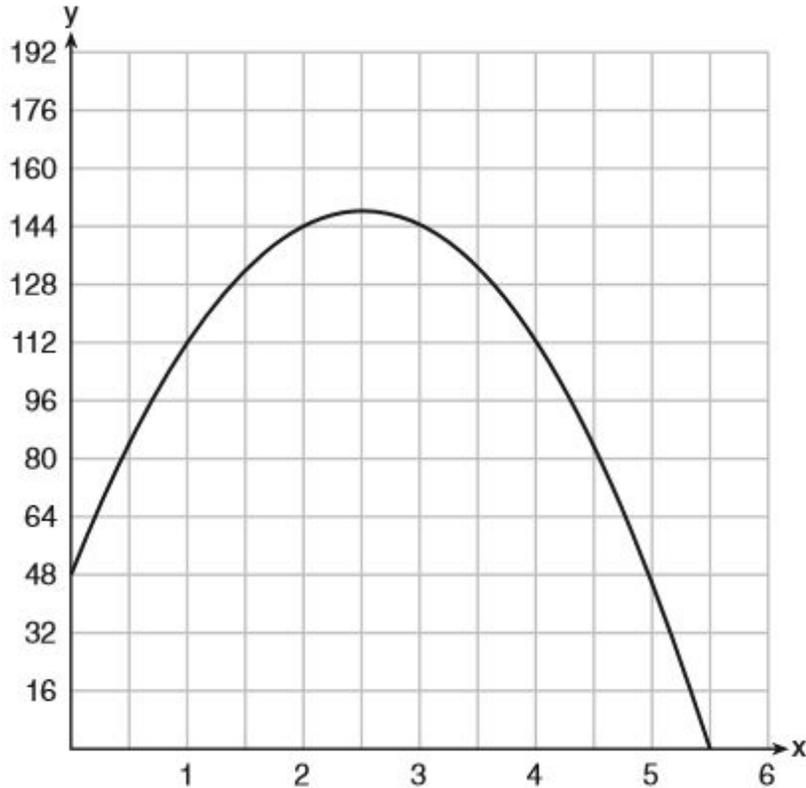
14) Which equation has the same solution as $x^2 - 6x - 12 = 0$?

- (1) $(x + 3)^2 = 21$
- (2) $(x - 3)^2 = 21$
- (3) $(x + 3)^2 = 3$
- (4) $(x - 3)^2 = 3$

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

16) A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands

on the ground. The graph below shows the height, y , of the ball from the ground after x seconds.



For which interval is the ball's height always decreasing?

- (1) $0 \leq x \leq 2.5$ (3) $2.5 < x < 5.5$
 (2) $0 < x < 5.5$ (4) $x \geq 2$

17) Given: $L = \sqrt{2}$ $M = 3\sqrt{3}$ $N = \sqrt{16}$ $P = \sqrt{9}$

Which expression results in a rational number?

- (1) $L + M$ (3) $N + P$
 (2) $M + N$ (4) $P + L$

18) If $f(x) = \frac{1}{3}x + 9$, which statement is always true?

- (1) $f(x) < 0$ (3) If $x < 0$, then $f(x) < 0$.
 (2) $f(x) > 0$ (4) If $x > 0$, then $f(x) > 0$.

19) Alex is selling tickets to a school play. An adult ticket costs \$6.50 and a student ticket costs \$4.00. Alex sells x adult tickets and 12 student tickets. Write a function, $f(x)$, to represent how much money Alex collected from selling tickets.

