

Name _____ Block _____ Date: _____
PARCC Review #1

1) Which expression is equivalent to $(3x^5 + 8x^3) - (7x^2 - 6x^3)$?

- Ⓐ $-4x^3 + 14$
- Ⓑ $-4x^5 + 14x^3$
- Ⓒ $3x^5 + 14x^3 - 7x^2$
- Ⓓ $3x^5 + 2x^3 - 7x^2$

2) Which points are on the graph of the equation $-3x + 6y + 5 = -7$? Select **all** that apply.

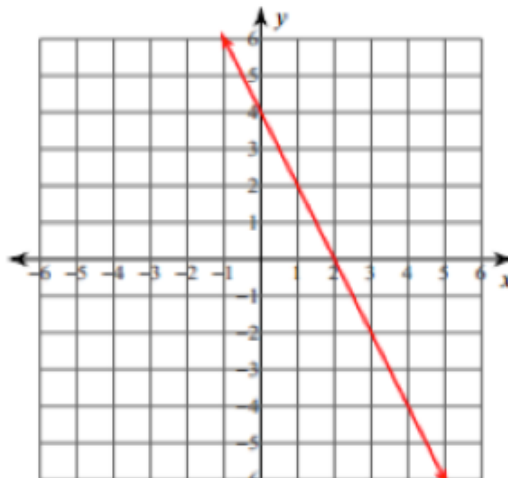
- Ⓐ $(-3, 6)$
- Ⓑ $(-2, 0)$
- Ⓒ $(0, -2)$
- Ⓓ $(6, -3)$
- Ⓔ $(8, 2)$

3) Which points are on the graph of the equation $y = x^2 - x$? Select **all** that apply.

- a. $(-1, 0)$
- b. $(0, 0)$
- c. $(1, 0)$
- d. $(5, 20)$
- e. $(-5, 20)$

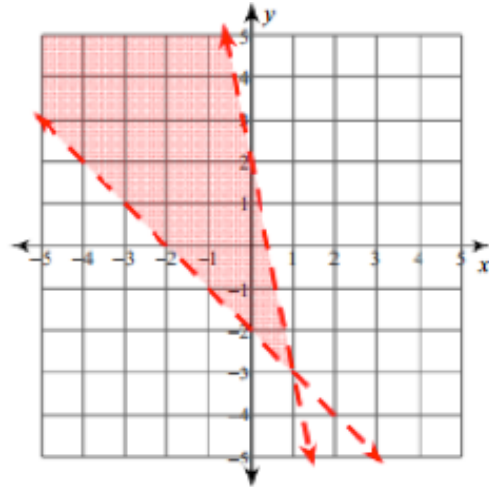
4) Which equation represents the following graph?

- a. $2x - y = 4$
- b. $x - 2y = 4$
- c. $2x + y = 4$
- d. $x + 2y = 4$



5) The following graph best represents which of the following systems of inequalities?

- A. $y \leq -5x + 2$ and $y \geq -x - 2$
- B. $y > -5x + 2$ and $y > -x - 2$
- C. $y < -5x + 2$ and $y > -x - 2$
- D. $y < 5x + 2$ and $y > x - 2$



6) The value, V , of an investment is given by the function $V(t)$, where t is the number of years since 1995 and V is measured in thousands of dollars. Which equation indicates that the investment had a value of \$8,000 in 2005?

- A. $V(8) = 10$
- B. $V(10) = 8$
- C. $V(8,000) = 2005$
- D. $V(2005) = 8,000$

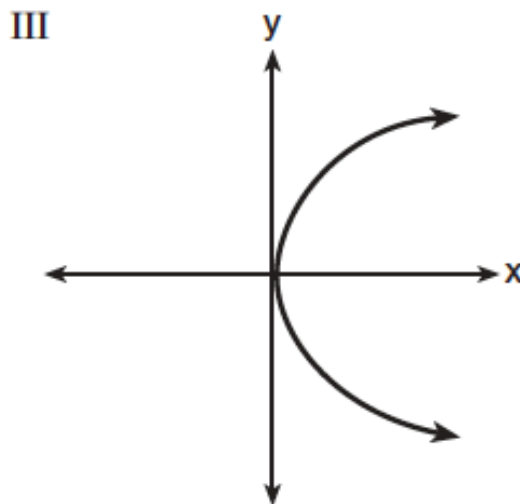
7) The cost of a pack of chewing gum in a vending machine is \$0.75. The cost of a bottle of juice in the same machine is \$1.25. Julia has \$22.00 to spend on chewing gum and bottles of juice for her team and she must buy seven packs of chewing gum. If b represents the number of bottles of juice, which inequality represents the maximum number of bottles she can buy?

- (1) $0.75b + 1.25(7) \geq 22$
- (2) $0.75b + 1.25(7) \leq 22$
- (3) $0.75(7) + 1.25b \geq 22$
- (4) $0.75(7) + 1.25b \leq 22$

- 8) A typical cell phone plan has a fixed base fee that includes a certain amount of data and an overage charge for data use beyond the plan. A cell phone plan charges a base fee of \$62 and an overage charge of \$30 per gigabyte of data that exceed 2 gigabytes. If C represents the cost and g represents the total number of gigabytes of data, which equation could represent this plan when more than 2 gigabytes are used?
- (1) $C = 30 + 62(2 - g)$ (3) $C = 62 + 30(2 - g)$
 (2) $C = 30 + 62(g - 2)$ (4) $C = 62 + 30(g - 2)$
- 9) Last week, a candle store received \$355.60 for selling 20 candles. Small candles sell for \$10.98 and large candles sell for \$27.98. How many large candles did the store sell?
- (1) 6 (3) 10
 (2) 8 (4) 12
- 10) Which representations are functions? Select **all** that apply.

I

x	y
2	6
3	-12
4	7
5	5
2	-6



II $\{ (1,1), (2,1), (3,2), (4,3), (5,5), (6,8), (7,13) \}$

IV $y = 2x + 1$

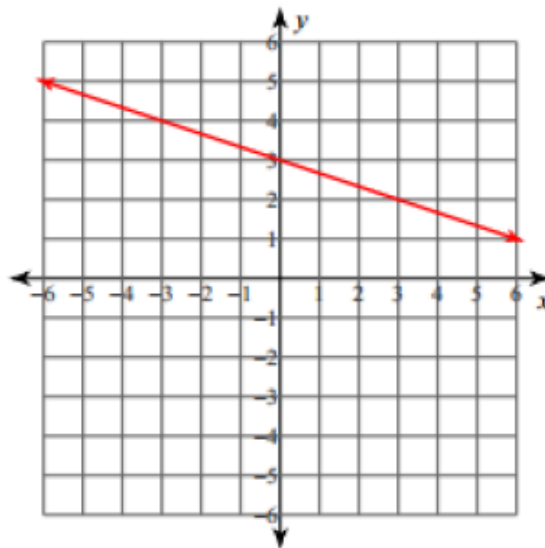
- 11) Rowan has \$50 in a savings jar and is putting in \$5 every week. Jonah has \$10 in his own jar and is putting in \$15 every week. Each of them plots his progress on a graph with time on the horizontal axis and amount in the jar on the vertical axis. Which statement about their graphs is true?

- (1) Rowan's graph has a steeper slope than Jonah's.
- (2) Rowan's graph always lies above Jonah's.
- (3) Jonah's graph has a steeper slope than Rowan's.
- (4) Jonah's graph always lies above Rowan's.

12)

The graph of the function $f(x) = \frac{-1}{3}x + 3$ is shown on the coordinate plane.

- a. For what value of x does $f(x) = 0$?
- b. For what value of x does $f(x) = 6$?
- c. What is the value of $f(3)$?
- d. What is the value of $f(-1)$?



13) The table shows values for a linear function, $f(x)$.

x	$f(x)$
-1	-8
3	-5
7	-2
11	1

What is an equation for $f(x)$?

$$f(x) = \underline{\hspace{4cm}}$$

14a) A dump truck weighs 11.25 tons when empty. A conveyor belt pours sand into the truck at a constant rate of $\frac{1}{4}$ ton per minute until it is full. Let t represent the elapsed time in minutes. Let w represent the weight of the truck after t minutes. Write an equation for w in terms of t .

$$w(t) = \underline{\hspace{4cm}}$$

14b) The dump truck from Part A weighs 18 tons when filled. At the same time the dump truck is being filled, an identical dump truck filled to capacity is being emptied at a rate of $\frac{1}{8}$ ton per minute. How much sand is in each dump truck when the trucks are the same weight?

15) A total of 160 students were surveyed from the countries of Australia, Canada, and the United Kingdom. One of the questions asked students to report which hand they considered to be their most dominant. Results are shown in the table.

	Right-Hand Dominant	Left-Hand Dominant	Total
Australia	68	11	79
Canada	46	6	52
United Kingdom	25	4	29
Total	139	21	160

Select an option to complete the sentence.

The country had the greatest percentage of its students report being right-hand

Australia
Canada
United Kingdom

dominant with approximately .

68%
86%
88%

16) The height, in inches of each of three boys is 54.0, 48.5, and 46.0, respectively. The height of a fourth boy is denoted by h inches.

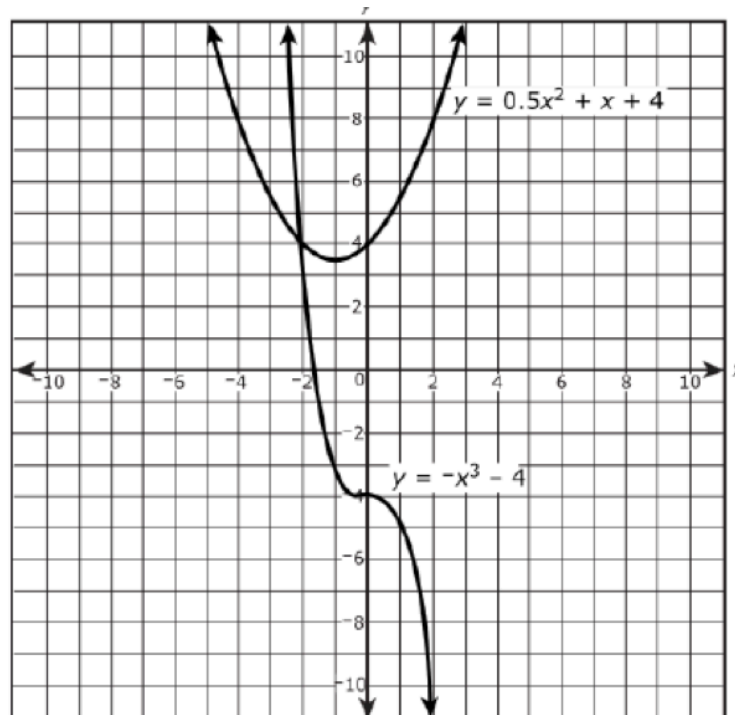
The average height, A , of the 4 boys can be expressed as a function of h in the form $A(h) = \frac{c+h}{d}$, where c and d are constants. What are the values of c and d ?

$c =$ _____ and $d =$ _____

17) Solve $4 - \frac{2}{3}x > 2 - x$ for x . Plot the solution on the number line.



18) The graphs of $f(x) = -x^3 - 4$ and $g(x) = 0.5x^2 + x + 4$ are given.



Use the graph to find the solution of $-x^3 - 4 = 0.5x^2 + x + 4$.

$x =$ _____

19a) The volume of a large can of tuna fish can be calculated using the formula $V = \pi r^2 h$. Write an equation to find the radius, r , in terms of V and h .

19b) Determine the diameter, to the *nearest inch*, of a large can of tuna fish that has a volume of 66 cubic inches and a height of 3.3 inches.

20) 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.

21a) Jackson is starting an exercise program. The first day he will spend 30 minutes on a treadmill. He will increase his time on the treadmill by 2 minutes each day. Write an equation for $T(d)$, the time, in minutes, on the treadmill on day d .

21b) Find $T(6)$, the minutes he will spend on the treadmill on day 6.

22) Tonya's class planted sunflowers and the students are tracking the growth of their individual plants. The table shows the height of Tonya's plant t days after she planted her sunflower seed.

Time (days)	Height (inches)
10	4
20	8
30	12
40	16

A) If the growth of the sunflower continues at the same rate, what is the expected height in inches, on day 55?

B) Based on the data in the table, which function is an appropriate model for the height, h , in inches at time t ?

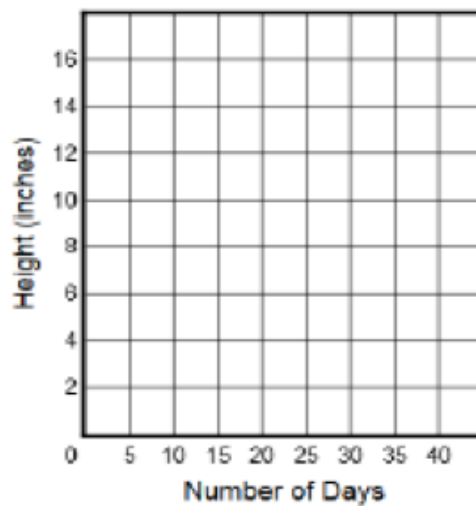
A. $h(t) = 4t$

B. $h(t) = \frac{1}{4}t$

C. $h(t) = \frac{5}{2}t$

D. $h(t) = \frac{2}{5}t$

C) On the given xy -coordinate plane graph $h(t)$.



D) What is an appropriate domain for this function in this context?

- a) integers only b) nonnegative integers only c) all real numbers d) all nonnegative numbers