CHANNEL VIEW
An Expeditionary Learning School

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June 2018
Entering Class: 401, 403, 404

Dear Parents:

In our effort to academically prepare your child for the coming school year, the math teachers at Channel View School for Research have prepared a math packet for the summer vacation to help your child reinforce and maintain his/her math skills.

Students are expected to complete all assigned work in the packet. Parents are asked to certify that their child completed the assignment. The math packet will be collected, scored, and reviewed in class. The completed math packet is due to your child's math teacher on the first day of school, **Wednesday, September 5, 2018**.

Working together we can insure maximum success for your child. Your cooperation in this matter is appreciated.

We wish you a happy and healthy summer.

Sincerely,

Mrs. Harper-Richardson
Principal

I certify that my child has completed the required 2018 Summer Vacation Math Assignment.

Student's Name _____ Entering Grade _____

Parent's Signature _____ Date _____

Name _____ Date _____

Channel View School: Mathematics Summer Packet

1. The product of $6x^3y^3$ and $2x^2y$ is 1) $3xy^2$ 3) $12x^5y^4$ 2) $8x^5y^4$ 4) $12x^6y^3$	5. When $6x^2 - 4x + 3$ is subtracted from $3x^2 - 2x + 3$, the result is 1) $3x^2 - 2x$ 3) $3x^2 - 6x + 6$ 2) $-3x^2 + 2x$ 4) $-3x^2 - 6x + 6$
2. What is the solution of $4x - 30 > -3x + 12$? 1) $x > 6$ 3) $x > -6$ 2) $x < 6$ 4) $x < -6$	6. Which value of x is the solution of the equation $2(x - 4) + 7 = 3$? 1) 1 2) 2 3) 6 4) 0
3. What is the value of x in the solution of the system of equations $3x + 2y = 12$ and $5x - 2y = 4$? 1) 8 2) 2 3) 3 4) 4	7. Which relation is a function? 1) {(2,1),(3,1),(4,1),(5,1)} 2) {(1,2), (1,3), (1,4), (1,5)} 3) {(2,3), (3,2), (4,2), (2,4)} 4) {(1,6), (2,8), (3,9), (3,12)}
4. Which situation describes a correlation that is *not* a causal relationship? 1) the number of miles walked and the total Calories burned 2) the population of a country and the census taken every ten years 3) the number of hours a TV is on and the amount of electricity used 4) the speed of a car and the number of hours it takes to travel a given distance	8. Three times the sum of a number and four is equal to five times the number, decreased by two. If x represents the number, which equation is a correct translation of the statement? 1) $3(x + 4) = 5x - 2$ 2) $3(x + 4) = 5(x - 2)$ 3) $3x + 4 = 5x - 2$ 4) $3x + 4 = 5(x - 2)$

9. Which equation represents a line that is parallel to the y-axis?

1) $x = 5$
2) $x = 5y$
3) $y = 5$
4) $y = 5x$

10. What is the solution set of the equation $(x-2)(x-a) = 0$?

1) -2 and a
2) -2 and $-a$
3) 2 and a
4) 2 and $-a$

11. Keith determines the zeros of the function $f(x)$ to be -6 and 5. What could be Keith's function?

1) $f(x) = (x+5)(x+6)$
2) $f(x) = (x+5)(x-6)$
3) $f(x) = (x-5)(x+6)$
4) $f(x) = (x-5)(x-6)$

12. 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

13. Which expression is equivalent to $y^4 - 100$?

1) $(y^2-10)^2$
2) $(y^2-50)^2$
3) $(y^2+10)(y^2-10)$
4) $(y^2+50)(y^2-50)$

14. What is the value of the expression $3a^2 - 4|a| + 6$ when $a = -3$?

1) -24
2) -9
3) 21
4) 45

15. 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) $(x-3)^2 = 3$

16. The product of $\sqrt{576}$ and $\sqrt{684}$ is

1) irrational because both factors are irrational
2) rational because both factors are rational
3) irrational because one factor is irrational
4) rational because one factor is rational

17. If $A = 3x^2 + 5x - 6$ and $B = -2x^2 - 6x + 7$, then $A - B$ equals

1) $-5x^2 - 11x + 13$
2) $5x^2 + 11x - 13$
3) $-5x^2 - x + 1$
4) $5x^2 - x + 1$

18. For which function defined by a polynomial are the zeros of the polynomial -4 and -6?

1) $y = x^2 - 10x - 24$
2) $y = x^2 + 10x + 24$
3) $y = x^2 + 10x - 24$
4) $y = x^2 - 10x + 24$

19. The table below represents the function F.

x	3	4	6	7	8
$F(x)$	9	17	65	129	257

The equation that represents this function is

1) $F(x) = 3^x$
2) $F(x) = 3x$
3) $F(x) = 2^x + 1$
4) $F(x) = 2x + 3$

20 Which point is *not* on the graph represented by

$$y = x^2 + 3x - 6?$$

1) $(-6, 12)$
2) $(-4, -2)$
3) $(2, 4)$
4) $(3, -6)$

21. Christopher looked at his quiz scores shown below for the first and second semester of his Algebra class.

Semester 1: 78, 91, 88, 83, 94
Semester 2: 91, 96, 80, 77, 88, 85, 92

Which statement about Christopher's performance is correct?

1) The interquartile range for semester 1 is greater than the interquartile range for semester 2.
2) The median score for semester 1 is greater than the median score for semester 2.
3) The mean score for semester 2 is greater than the mean score for semester 1.
4) The third quartile for semester 2 is greater than the third quartile for semester 1.

22. The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. The radius, r, of the cone may be expressed as

1) $\sqrt{\frac{3V}{\pi h}}$
2) $\sqrt{\frac{V}{3\pi h}}$
3) $3\sqrt{\frac{V}{\pi h}}$
4) $\frac{1}{3}\sqrt{\frac{V}{\pi h}}$

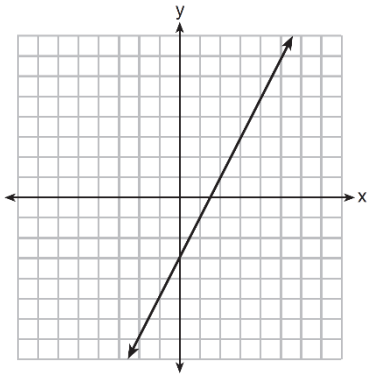
23. The value of the x-intercept for the graph of $4x - 5y = 40$ is

1) 10
2) $\frac{4}{5}$
3) $-\frac{4}{5}$
4) -8

24. Which situation could be modeled by using a linear function?

1) a bank account balance that grows at a rate of 5% per year, compounded annually
2) a population of bacteria that doubles every 4.5 hours
3) the cost of cell phone service that charges a base amount plus 20 cents per minute
4) the concentration of medicine in a person's body that decays by a factor of one-third every hour

25. Which function has the same *y*-intercept as the graph below?



1) $y = \frac{12 - 6x}{4}$
2) $27 + 3y = 6x$
3) $6y + x = 18$
4) $y + 3 = 6x$

28. Which table of values represents a linear relationship?

1)

x	f(x)
−1	−3
0	−2
1	1
2	6
3	13

2)

x	f(x)
−1	$\frac{1}{2}$
0	1
1	2
2	4
3	8

3)

x	f(x)
−1	−3
0	−1
1	1
2	3
3	5

4)

x	f(x)
−1	−1
0	0
1	1
2	8
3	27

26. Sam and Jeremy have ages that are consecutive odd integers. The product of their ages is 783. Which equation could be used to find Jeremy's age, *j*, if he is the younger man?

1) $j^2 + 2 = 783$
2) $j^2 - 2 = 783$
3) $j^2 + 2j = 783$
4) $j^2 - 2j = 783$

29. What is the value of *x* in the equation $\frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$?

1) 4
2) 6
3) 8
4) 11

27. The function $h(t) = -16t^2 + 144$ represents the height, $h(t)$, in feet, of an object from the ground at *t* seconds after it is dropped. A realistic domain for this function is

1) $-3 \le t \le 3$
2) $0 \le t \le 3$
3) $0 \le h(t) \le 144$
4) all real numbers

30. The owner of a small computer repair business has one employee, who is paid an hourly rate of $22. The owner estimates his weekly profit using the function $P(x) = 8600 - 22x$. In this function, *x* represents the number of

1) computers repaired per week
2) hours worked per week
3) customers served per week
4) days worked per week

31. The inequality $7-\frac{2}{3}x < x-8$ is equivalent to

1) $x > 9$
2) $x > -\frac{3}{5}$
3) $x < 9$
4) $x < -\frac{3}{5}$

32. Which equation has the same solutions as

$$2x^2 + x - 3 = 0$$

1) $(2x-1)(x+3) = 0$
2) $(2x+1)(x-3) = 0$
3) $(2x-3)(x+1) = 0$
4) $(2x+3)(x-1) = 0$

33. The equation for the volume of a cylinder is $V = \pi r^2 h$. The positive value of *r*, in terms of *h* and *V*, is

1) $r = \sqrt{\frac{V}{\pi h}}$
2) $r = \sqrt{V\pi h}$
3) $r = 2V\pi h$
4) $r = \frac{V}{2\pi}$

34. If a sequence is defined recursively by $f(0) = 2$ and $f(n+1) = -2f(n) + 3$ for $n \geq 0$, then $f(2)$ is equal to

1) 1
2) -11
3) 5
4) 17

35. If the area of a rectangle is expressed as $x^4 - 9y^2$, then the product of the length and the width of the rectangle could be expressed as

1) $(x-3y)(x+3y)$
2) $(x^2-3y)(x^2+3y)$
3) $(x^2-3y)(x^2-3y)$
4) $(x^4+y)(x-9y)$

36. Which domain would be the most appropriate set to use for a function that predicts the number of household online-devices in terms of the number of people in the household?

1) integers
2) whole numbers
3) irrational numbers
4) rational numbers

37. The graph of a linear equation contains the points $(3, 11)$ and $(-2, 1)$. Which point also lies on the graph?

1) $(2, 1)$
2) $(2, 4)$
3) $(2, 6)$
4) $(2, 9)$

38. Two functions, $y = |x-3|$ and $3x + 3y = 27$, are graphed on the same set of axes. Which statement is true about the solution to the system of equations?

1) $(3, 0)$ is the solution to the system because it satisfies the equation $y = |x-3|$.
2) $(9, 0)$ is the solution to the system because it satisfies the equation $3x + 3y = 27$.
3) $(6, 3)$ is the solution to the system because it satisfies both equations.
4) $(3, 0)$, $(9, 0)$, and $(6, 3)$ are the solutions to the system of equations because they all satisfy at least one of the equations.

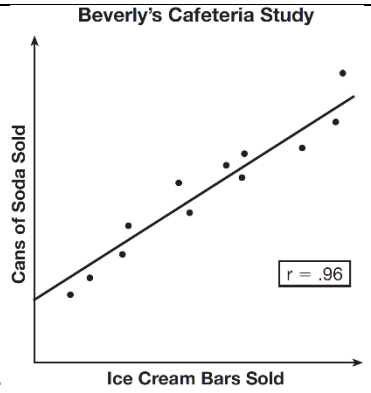
39. When factored completely, the expression $p^4 - 81$ is equivalent to

1) $(p^2+9)(p^2-9)$
2) $(p^2-9)(p^2-9)$
3) $(p^2+9)(p+3)(p-3)$
4) $(p+3)(p-3)(p+3)(p-3)$

40. Mo's farm stand sold a total of 165 pounds of apples and peaches. She sold apples for $1.75 per pound and peaches for $2.50 per pound. If she made $337.50, how many pounds of peaches did she sell?

1) 11
2) 18
3) 65
4) 100

41.



Given this information, which statement(s) can correctly be concluded?

I. Eating more ice cream causes a person to become thirsty.
II. Drinking more soda causes a person to become hungry.
III. There is a strong correlation between ice cream sales and soda sales.

1) I, only
2) III, only
3) I and III
4) II and III

42. Which table represents a function?

1)

x	2	4	2	4
f(x)	3	5	7	9

2)

x	0	−1	0	1
f(x)	0	1	−1	0

3)

x	3	5	7	9
f(x)	2	4	2	4

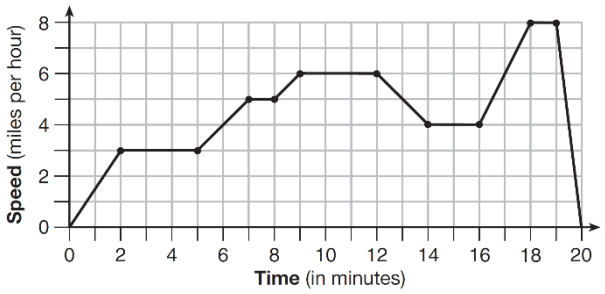
4)

x	0	1	−1	0
f(x)	0	−1	0	1

43. The third term in an arithmetic sequence is 10 and the fifth term is 26. If the first term is a_1, which is an equation for the *n*th term of this sequence?

1) $a_n = 8n + 10$
2) $a_n = 8n - 14$
3) $a_n = 16n + 10$
4) $a_n = 16n - 38$

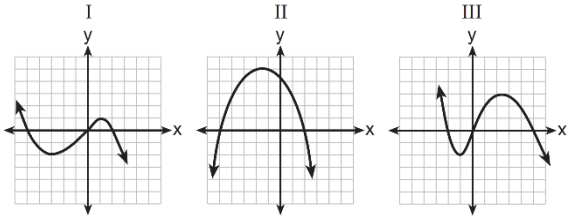
44. The graph below represents a jogger's speed during her 20-minute jog around her neighborhood.



Which statement best describes what the jogger was doing during the $9 - 12$ minute interval of her jog?

1) She was standing still.
2) She was increasing her speed.
3) She was decreasing her speed.
4) She was jogging at a constant rate.

45. A polynomial function contains the factors x, $x - 2$, and $x + 5$. Which graph(s) below could represent the graph of this function?



1) I, only
2) II, only
3) I and III
4) I, II, and III

46. What are the zeros of the function $f(x) = x^2 - 13x - 30$?

1) -10 and 3
2) 10 and -3
3) -15 and 2
4) 15 and -2

47. 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
2) 8
3) 10
4) 12

48. Which trinomial is equivalent to

$$3(x-2)^2 - 2(x-1)?$$

1) $3x^2 - 2x - 10$
2) $3x^2 - 2x - 14$
3) $3x^2 - 14x + 10$
4) $3x^2 - 14x + 14$

49. The solution of the equation $(x+3)^2 = 7$ is

1) $3 \pm \sqrt{7}$
2) $7 \pm \sqrt{3}$
3) $-3 \pm \sqrt{7}$
4) $-7 \pm \sqrt{3}$

50. Analysis of data from a statistical study shows a linear relationship in the data with a correlation coefficient of -0.524. Which statement best summarizes this result?

1) There is a strong positive correlation between the variables.
2) There is a strong negative correlation between the variables.
3) There is a moderate positive correlation between the variables.
4) There is a moderate negative correlation between the variables.