CHANNEL VIEW
An Expeditionary Learning School

June 2017
Entering Grade 10

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, **Thursday, September 7, 2017**.

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 2017 Summer Vacation Math Assignment.

Student's Name _____ Entering Grade _____

Parent's Signature _____ Date _____

1. Simplify: $5(3x + 6y) + 2(x - y)$

   A. $5(3x + 6y) + 2x + 2y$

   B. $10x + 9y$

   C. $17x + 5y$

   D. $17x + 28y$

2. Factor: $8x + 12$

   A. $8(x + 12)$

   B. $4(2x + 3)$

   C. $\frac{1}{2}(x + 24)$

   D. $2(8x + 6)$

3. What is the result when $8x + 3$ is subtracted from $-2x + 5$?

   A. $-10x + 2$

   B. $10x - 2$

   C. $6x + 8$

   D. $-10x + 8$

4. Kelsey scored the following points in her first six basketball games: 22, 14, 19, 22, 8, and 17. What is the relationship between the measures of central tendency of these data?

   A. mode > median > mean

   B. median > mode > mean

   C. mean > median > mode

   D. mode > mean > median

5. The value of y in the equation
     $0.06y + 200 = 0.03y + 350$ is

   A. 500

   B. $1,666.\overline{6}$

   C. 5,000

   D. $18,333.\overline{3}$

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

   A. $-2x^2 + 10x - 18$

   B. $-2x^2 + 10x + 18$

   C. $2x^2 - 6x - 4$

   D. $-2x^2 + 6x + 4$

7. Evaluate this expression if $a = 4$

$$[(18 + 6) \div a] + (a + 7) - 16$$

   A. 1

   B. 7

   C. 17

   D. 21

8. At which point will the graphs of the equations $2x + y = 8$ and $x - y = 4$ intersect?

   A. $(0, 4)$

   B. $(4, 0)$

   C. $(-4, 0)$

   D. $(5, -2)$

9. What are the factors of $x^2 - 10x - 24$?

   A. $(x - 4)(x + 6)$

   B. $(x - 4)(x - 6)$

   C. $(x - 12)(x + 2)$

   D. $(x + 12)(x - 2)$

10. What is the solution of the inequality $-6x - 17 \geq 8x + 25$?

   A. $x \geq 3$

   B. $x \leq 3$

   C. $x \geq -3$

   D. $x \leq -3$

11. The list below shows the number of minutes Karenna talked on her cell phone for the last eight days.

     43, 55, 0, 187, 42, 56, 40, 49

What is the median of this data?

   A. 54

   B. 49

   C. 46

   D. 43

12. A system of equations is graphed on the set of axes below.
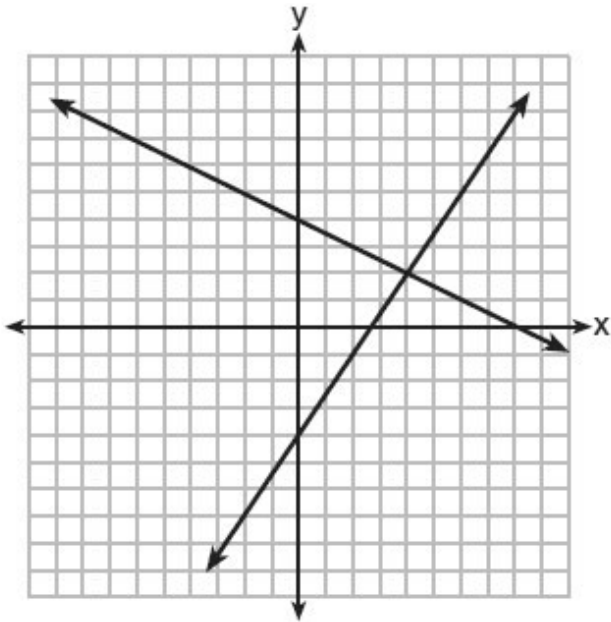

The solution of this system is

  A. (0,4)
  B. (2,4)
  C. (4,2)
  D. (8,0)

13. Which list of ordered pairs does *not* represent a one-to-one function?

  A. (1,−1), (2,0), (3,1), (4,2)
  B. (1,2), (2,3), (3,4), (4,6)
  C. (1,3), (2,4), (3,3), (4,1)
  D. (1,5), (2,4), (3,1), (4,0)

14. Fred is given a rectangular piece of paper. If the length of Fred's piece of paper is represented by $2x - 6$ and the width is represented by $3x - 5$, then the paper has a total area represented by

  A. $5x - 11$
  B. $6x^2 - 28x + 30$
  C. $10x - 22$
  D. $6x^2 - 6x - 11$

15. Based on the box-and-whisker plot below, which statement is *false*?
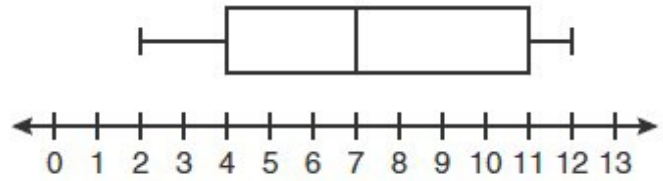
  A. The median is 7.
  B. The range is 12.
  C. The first quartile is 4.
  D. The third quartile is 11.

16. 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

  A. $(x - 3y)(x + 3y)$
  B. $(x^2 - 3y)(x^2 + 3y)$
  C. $(x^2 - 3y)(x^2 - 3y)$
  D. $(x^4 + y)(x - 9y)$

17. What are the roots of the equation $x^2 - 5x + 6 = 0$?

  A. 1 and −6
  B. 2 and 3
  C. −1 and 6
  D. −2 and −3

18. In her most recent basketball games, Kara scored the following points:

      13, 21, 22, 24

What is the mean of the points Kara scored?

  A. 24
  B. 22
  C. 20
  D. 19

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

  A. −10 and 3
  B. 10 and −3
  C. −15 and 2
  D. 15 and −2

20. Simplify the following expression: $6y - 2y(x + 1)$

   A. $4y + 2xy$
   B. $4y - 2xy$
   C. $-2xy - 4y$
   D. $2xy - 4y$

21. What is the slope of the line that passes through the points $(2, -3)$ and $(5, 1)$?

   A. $-\dfrac{2}{3}$

   B. $\dfrac{2}{3}$

   C. $-\dfrac{4}{3}$

   D. $\dfrac{4}{3}$

22. Find the product of 6, m and 5. Then, identify the coefficient.

   A. $11m$; the coefficient is m.
   B. $11m$; the coefficient is 11.
   C. $30m$; the coefficient is m.
   D. $30m$; the coefficient is 30.

23. The solutions of $x^2 = 16x - 28$ are

   A. –2 and –14
   B. 2 and 14
   C. –4 and –7
   D. 4 and 7

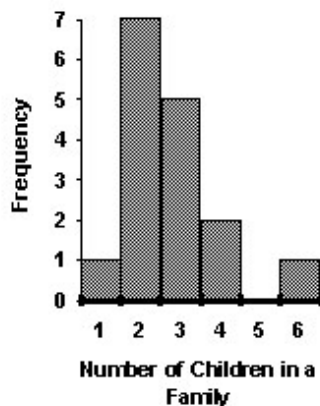24. Four expressions are shown below.

I	$2(2x^2 - 2x - 60)$
II	$4(x^2 - x - 30)$
III	$4(x + 6)(x - 5)$
IV	$4x(x - 1) - 120$

The expression $4x^2 - 4x - 120$ is equivalent to

   A. I and II, only
   B. II and IV, only
   C. I, II, and IV
   D. II, III, and IV

25. The bar graph shows the distribution of the number of children in the families of the students in a ninth-grade class.

The mode of the set of data in the bar graph is
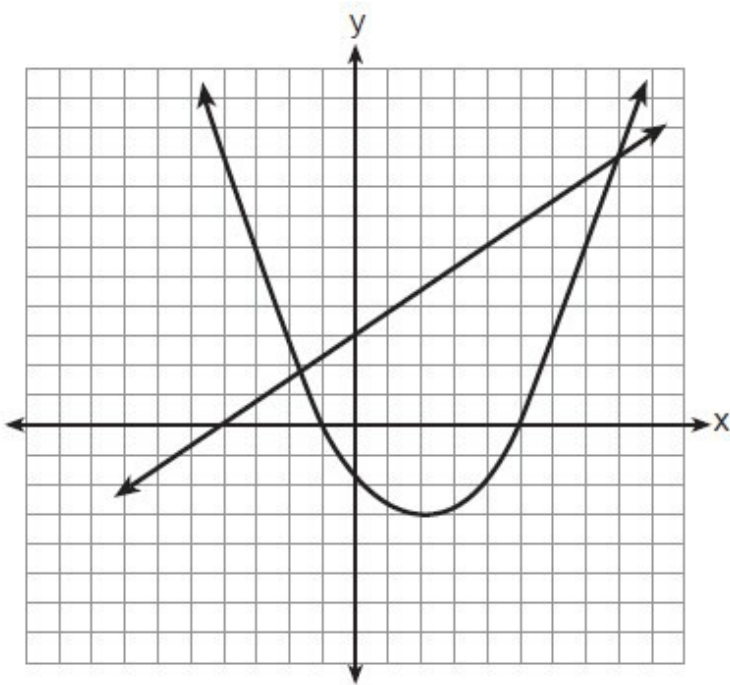
   A. 5
   B. 2
   C. 3
   D. 7

26. What are the roots of the equation $x^2 - 10x - 20 = 0$?

   A. $10 \pm 6\sqrt{5}$
   B. $-10 \pm 6\sqrt{5}$
   C. $5 \pm 3\sqrt{5}$
   D. $-5 \pm 3\sqrt{5}$

27. Which expression is equivalent to $81 - 16x^2$?

   A. $(9 - 8x)(9 + 8x)$
   B. $(9 - 8x)(9 + 2x)$
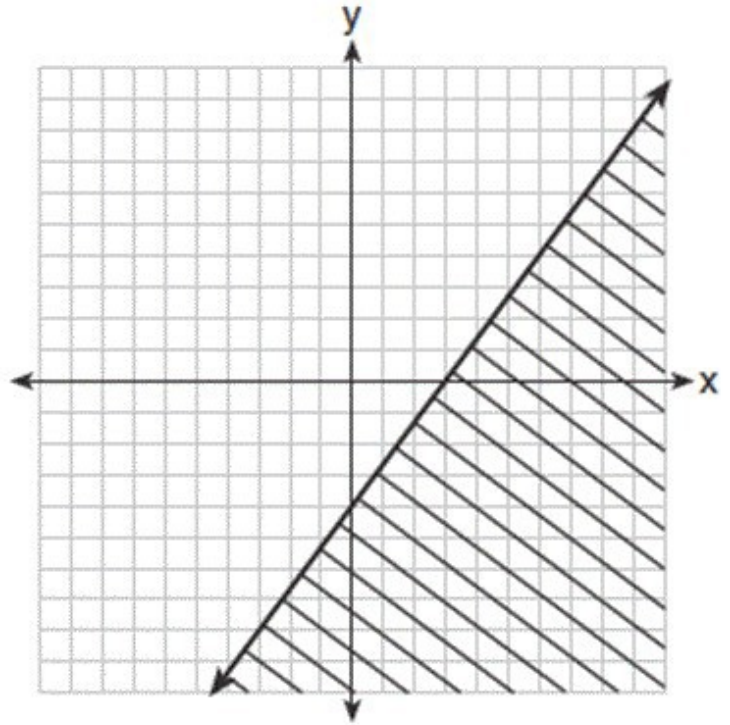   C. $(9 - 4x)(9 + 4x)$
   D. $(9 - 4x)(9 - 4x)$

28. Two equations were graphed on the set of axes below.

Which point is a solution of the system of equations shown on the graph?

A. (8, 9)
B. (5, 0)
C. (0, 3)
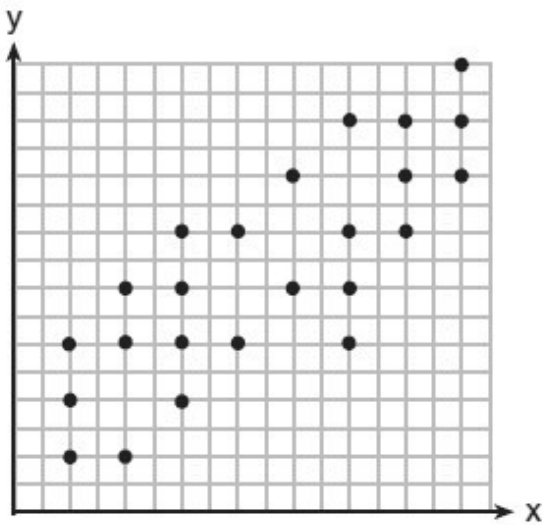D. (2, –3)

29. Which inequality is shown in the graph below?

A. $y \leq \frac{4}{3}x + 3$

B. $y \geq \frac{4}{3}x + 3$

C. $y \leq \frac{4}{3}x - 4$

D. $y \geq \frac{4}{3}x - 4$

30. Which equation represents a quadratic function?

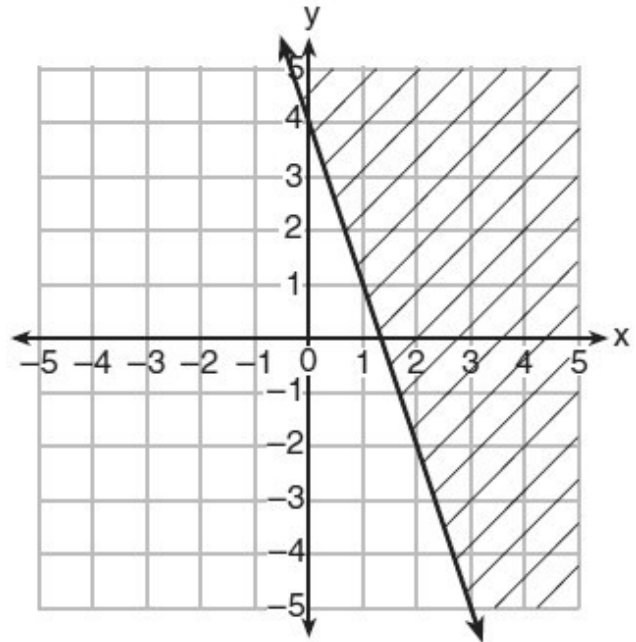A. $y = x + 2$
B. $y = |x + 2|$
C. $y = x^2$
D. $y = 2^x$

31. The scatter plot shown below represents a relationship between x and y.

This type of relationship is

   A. a positive correlation
   B. a negative correlation
   C. a zero correlation
   D. not able to be determined

32. Which inequality is represented in the graph below?

   A. $y \geq -3x + 4$
   B. $y \leq -3x + 4$
   C. $y \geq -4x - 3$
   D. $y \leq -4x - 3$
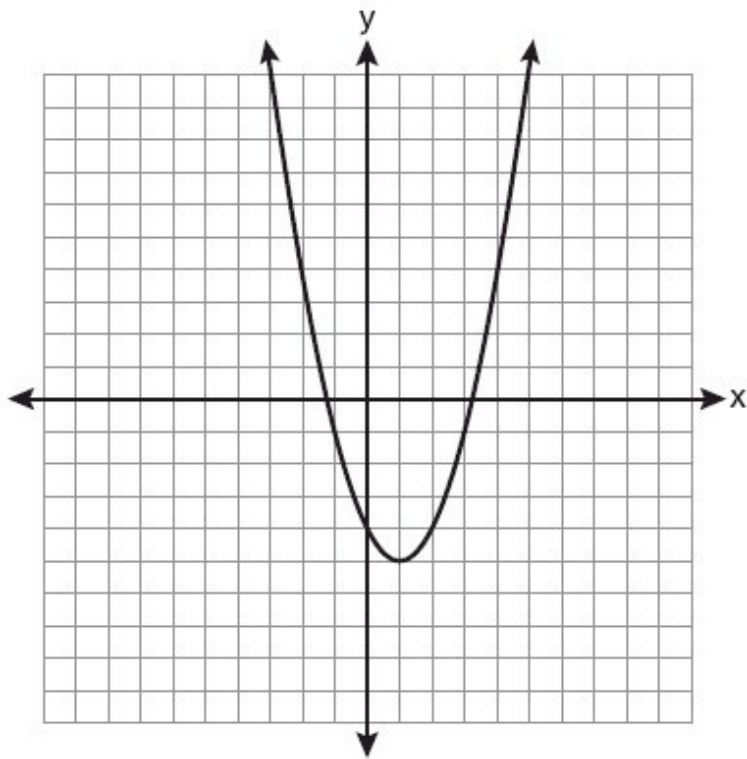
33. Simplify the following expression.

$$3(x + 2) - 5x$$

   A. $6 - 2x$
   B. $8x + 2$
   C. $-2x + 2$
   D. $2x + 6$

34. Given the linear equation $y = 2x + 3$ and the input $x = 2$, what is the resulting ordered pair?

   A. (2, 3)
   B. (2, 1)
   C. (2, 7)
   D. (7, 2)

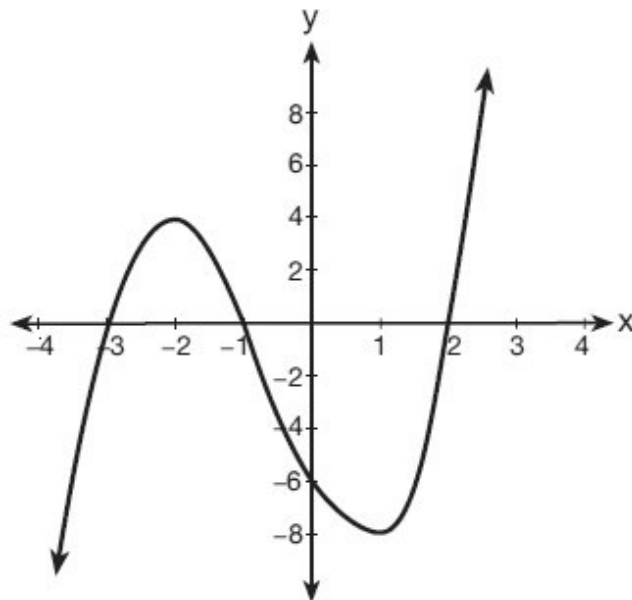35. State the equation of the axis of symmetry and the coordinates of the vertex of the parabola graphed below.

A. AOS: $x = 1$; vertex $(1, -5)$
B. AOS: $y = 1$; vertex $(1, -5)$
C. AOS: $x = 1$; vertex $(1, 5)$
D. AOS: $x = 1$; vertex $(-1, -5)$

36. Find the sum of $3x^2 + 5x - 1$ and $x^2 - 2x - 7$.

A. $2x^2 - 7x - 6$
B. $-2x^2 - 7x + 6$
C. $4x^2 - 3x + 8$
D. $4x^2 + 3x - 8$

37. What are the zeros of the polynomial function graphed below?

A. $\{-3, -1, 2\}$
B. $\{3, 1, -2\}$
C. $\{4, -8\}$
D. $\{-6\}$

38. Which trinomial is equivalent to $3(x - 2)^2 - 2(x - 1)$?

A. $3x^2 - 2x - 10$
B. $3x^2 - 2x - 14$
C. $3x^2 - 14x + 10$
D. $3x^2 - 14x + 14$

39. Solve for s: $7s + 4(3 - s) = 18$

A. 1
B. 2
C. 3
D. 4

40. This year the seniors at Chester High School and Lewisville High School planned trips to Myrtle Beach, SC. Chester High School rented and completely filled 4 vans and 2 busses with 112 students. Lewisville High School rented and completely filled 6 vans and 3 busses with 168 students. Write a system of equations that would help you find the number of students on a van and a bus.

A. $4v+2b=168$
   $6v+3b=112$

B. $6v+2b=168$
   $4v+3b=112$

C. $4v+2b=112$
   $6v+3b=168$

D. $4v+6b=168$
   $2v+3b=112$

41. What are the roots of the equation

$$x^2 + 6x - 4 = 0?$$

A. $6\pm2\sqrt{13}$
B. $-6\pm2\sqrt{13}$
C. $3\pm\sqrt{13}$
D. $-3\pm\sqrt{13}$

42. Simplify the expression: $5(2n - 3) + 4(-3n + 2)$
A. -9
B. $8n - 1$
C. $-2n - 1$
D. $-2n - 7$

43. The sum of $8n^2 - 3n + 10$ and $-3n^2 - 6n - 7$ is
A. $5n^2 - 9n + 3$
B. $5n^2 - 3n - 17$
C. $-11n^2 - 9n - 17$
D. $-11n^2 - 3n + 3$

44. The expression $2x(y - 1) - 7xy + 2x$ is equivalent to
A. $-5xy - 4x$
B. $-5xy + 4x$
C. $5xy$
D. $-5xy$

45. Express $(4x - 5)(6x + 5)$ as a trinomial.
A. $24x^2 - 10x - 25$
B. $24x^2 - 50x - 25$
C. $24x^2 - 25$
D. $-24x^2 + 25$

A.