

St. Louis School
Summer Math
Entering Grade 8 Math
Geometry

All Students entering 8th grade are required to complete summer math work. This year, to reinforce learning during the summer and promote growth, students will be using IXL online in addition to worksheets for math practice.

- I. **IXL** – Each class has specifically assigned skills in IXL. IXL is an online program geared toward fluency practice. Students simply access the list of skills created by their teacher and click on a link to select an assigned skill. The link will take students to the skill where they login to begin. Students will use their St. Louis account to log on as they have done all school year. [IXL Link](#)

Students should pace themselves by completing five concepts each month at a level of 80% proficiency (five by June 26, an additional five by July 28, and five more by August 23). Teachers will be monitoring students' progress throughout the summer. Failure to complete the suggested skills will result in a lower effort grade.

Please contact Mrs. Zulma Whiteford at zwhiteford@stlouisparish.org if you have any questions or concerns about IXL.

- II. **Worksheets** – Scroll down to print the worksheets.

- **Show all work either on the worksheet or on looseleaf** in order to receive credit. Answers alone without supporting work will not receive credit.
- The looseleaf **MUST** include the student's name and be attached to the packet.
- Make sure to number the problems clearly. Work should be neat and organized.
- Class notes may be used for reference.

Complete some problems each week. Do not wait until the end of summer to complete the packet. This will allow you to maintain and improve your skills and help you to be successful next year.

All work should be **completed and turned in during the first week of school**. This packet will count as a **15-point assignment with five points awarded per trimester**.

Name _____

Date _____

2024 Summer Math, Entering 8th Grade Geometry

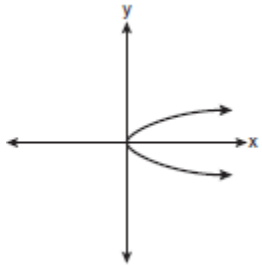
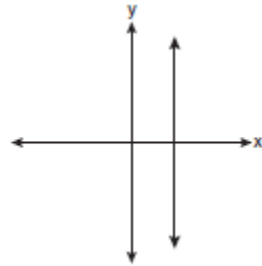
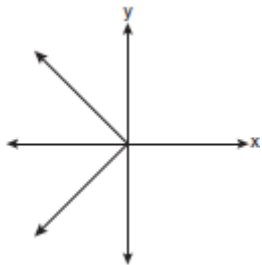
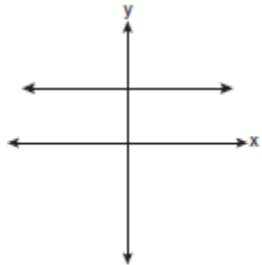
Multiple Choice

Identify the choice that best completes the statement or answers the question.

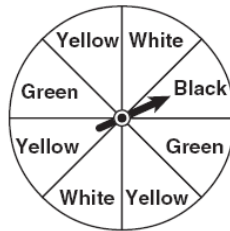
_____ 1. Which value of x is in the solution set of the inequality $-2x + 5 > 17$?

a.	-8	c.	-4
b.	-6	d.	-12

_____ 2. Which graph represents a function?

a.		c.	
b.		d.	

_____ 3. A spinner is divided into eight equal regions as shown in the diagram below.



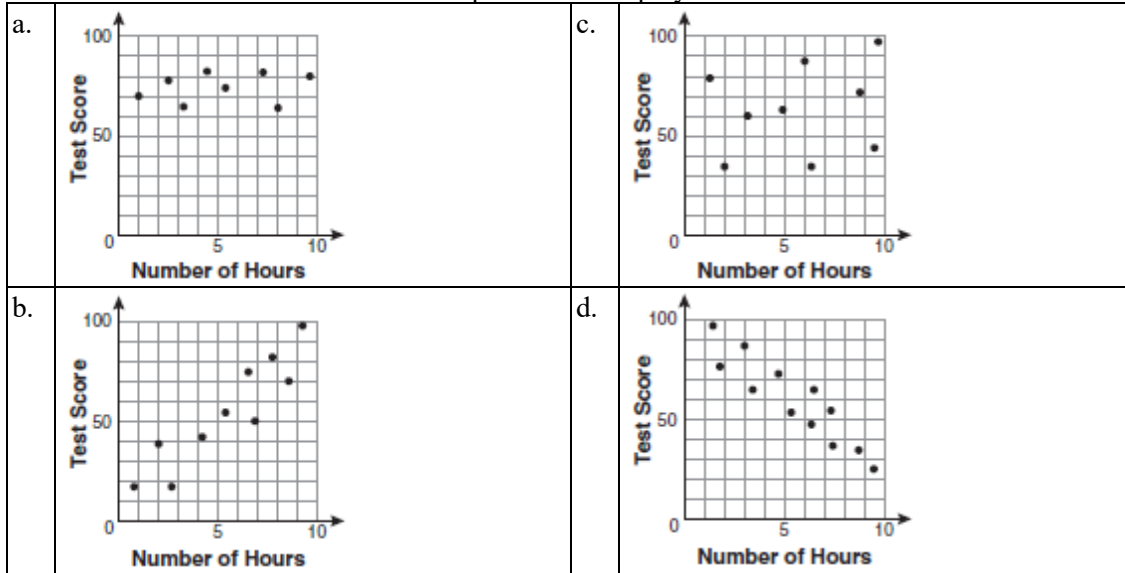
Which event is most likely to occur in one spin?

a.	The arrow will land in a green or white area.
b.	The arrow will land in a green or black area.
c.	The arrow will land in a yellow or black area.
d.	The arrow will land in a yellow or green area.

4. A school wants to add a coed soccer program. To determine student interest in the program, a survey will be taken. In order to get an unbiased sample, which group should the school survey?

a.	every third student entering the building
b.	every member of the varsity football team
c.	every member in Ms. Zimmer's drama classes
d.	every student having a second-period French class

5. There is a negative correlation between the number of hours a student watches television and his or her social studies test score. Which scatter plot below displays this correlation?



6. Which ordered pair is a solution to the system of equations $y = x$ and $y = x^2 - 2$?

a.	$(-2, -2)$	c.	$(0, 0)$
b.	$(-1, 1)$	d.	$(2, 2)$

7. Which equation represents a line that is parallel to the line $y = -4x + 5$?

a.	$y = -4x + 3$	c.	$y = \frac{1}{4}x + 3$
b.	$y = -\frac{1}{4}x + 5$	d.	$y = 4x + 5$

8. Which statement is true about the data set 3, 4, 5, 6, 7, 7, 10?

a.	mean = mode	c.	mean = median
b.	mean > mode	d.	mean < median

9. Which ordered pair is in the solution set of the following system of inequalities?

$$y < \frac{1}{2}x + 4$$

$$y \geq -x + 1$$

a.	$(-5, 3)$	c.	$(3, -5)$
b.	$(0, 4)$	d.	$(4, 0)$

10. The set $\{1, 2, 3, 4\}$ is equivalent to

a.	$\{x \mid 1 < x < 4, \text{ where } x \text{ is a whole number}\}$	c.	$\{x \mid 0 < x \leq 4, \text{ where } x \text{ is a whole number}\}$
b.	$\{x \mid 0 < x < 4, \text{ where } x \text{ is a whole number}\}$	d.	$\{x \mid 1 < x \leq 4, \text{ where } x \text{ is a whole number}\}$

11. Which equation represents a line that is parallel to the line $y = 3 - 2x$?

a.	$4x + 2y = 5$	c.	$y = 3 - 4x$
b.	$2x + 4y = 1$	d.	$y = 4x - 2$

12. Which value of x is in the solution set of $\frac{4}{3}x + 5 < 17$?

a.	8	c.	12
b.	9	d.	16

13. The set $\{11, 12\}$ is equivalent to

a.	$\{x \mid 11 < x < 12, \text{ where } x \text{ is an integer}\}$	c.	$\{x \mid 10 \leq x < 12, \text{ where } x \text{ is an integer}\}$
b.	$\{x \mid 11 < x \leq 12, \text{ where } x \text{ is an integer}\}$	d.	$\{x \mid 10 < x \leq 12, \text{ where } x \text{ is an integer}\}$

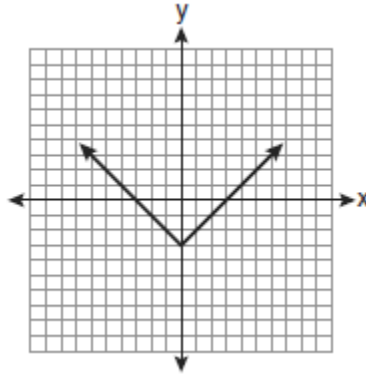
14. Which equation represents a line parallel to the x -axis?

a.	$y = -5$	c.	$x = 3$
b.	$y = -5x$	d.	$x = 3y$

15. Which value of x is in the solution set of the inequality $-2(x - 5) < 4$?

a.	0	c.	3
b.	2	d.	5

16. Which equation is represented by the graph below?



a.	$y = x^2 - 3$	c.	$y = x - 3$
b.	$y = (x - 3)^2$	d.	$y = x - 3 $

17. Which relation represents a function?

a.	$\{(0, 3), (2, 4), (0, 6)\}$	c.	$\{(2, 0), (6, 2), (6, -2)\}$
b.	$\{(-7, 5), (-7, 1), (-10, 3), (-4, 3)\}$	d.	$\{(-6, 5), (-3, 2), (1, 2), (6, 5)\}$

18. Which scatter plot shows the relationship between x and y if x represents a student score on a test and y represents the number of incorrect answers a student received on the same test?

a.		c.	
b.		d.	

_____ 19. If Ann correctly factors an expression that is the difference of two perfect squares, her factors could be

a.	$(2x + y)(x - 2y)$	c.	$(x - 4)(x - 4)$
b.	$(2x + 3y)(2x - 3y)$	d.	$(2y - 5)(y - 5)$

_____ 20. Which ordered pair is in the solution set of the following system of linear inequalities?

$$y < 2x + 2$$

$$y \geq -x - 1$$

a.	$(0, 3)$	c.	$(-1, 0)$
b.	$(2, 0)$	d.	$(-1, -4)$

_____ 21. Which equation represents a line parallel to the graph of $2x - 4y = 16$?

a.	$y = \frac{1}{2}x - 5$	c.	$y = -2x + 6$
b.	$y = -\frac{1}{2}x + 4$	d.	$y = 2x + 8$

_____ 22. An example of an algebraic expression is

a.	$\frac{2x + 3}{7} = \frac{13}{x}$	c.	$4x - 1 = 4$
b.	$(2x + 1)(x - 7)$	d.	$x = 2$

Short Answer

23. Express $5\sqrt{72}$ in simplest radical form.

24. Solve for g: $3 + 2g = 5g - 9$

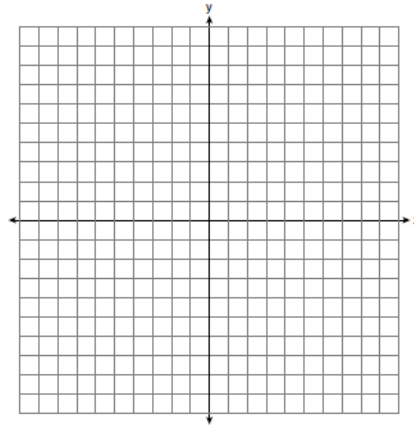
25. A prom ticket at Smith High School is \$120. Tom is going to save money for the ticket by walking his neighbor's dog for \$15 per week. If Tom already has saved \$22, what is the minimum number of weeks Tom must walk the dog to earn enough to pay for the prom ticket?

26. Mr. Laub has three children: two girls (Sue and Karen) and one boy (David). After each meal, one child is chosen at random to wash dishes. If the same child can be chosen for both lunch and dinner, construct a tree diagram or list a sample space of all the possible outcomes of who will wash dishes after lunch and dinner on Saturday. Determine the probability that one boy and one girl will wash dishes after lunch and dinner on Saturday.

27. Solve the following systems of equations graphically, on the set of axes below, and state the coordinates of the point(s) in the solution set.

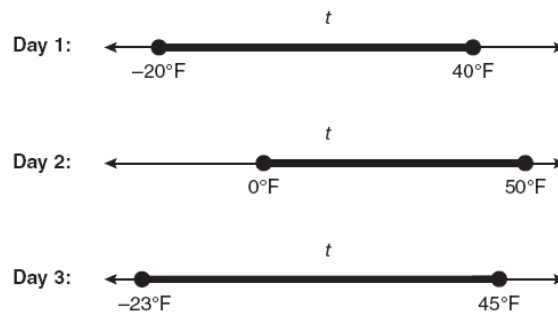
$$y = x^2 - 6x + 5$$

$$2x + y = 5$$



28. Solve for x : $\frac{x+1}{x} = \frac{-7}{x-12}$

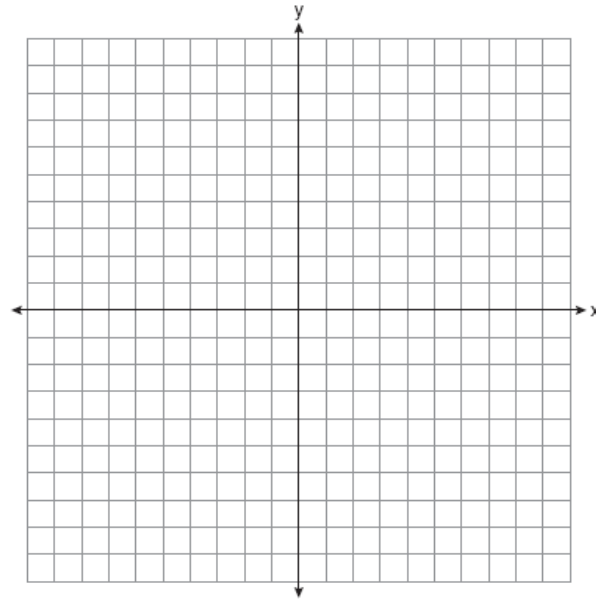
29. Maureen tracks the range of outdoor temperatures over three days. She records the following information.



Express the intersection of the three sets as an inequality in terms of temperature, t .

30. The Hudson Record Store is having a going-out-of-business sale. CDs normally sell for \$18.00. During the first week of the sale, all CDs will sell for \$15.00. Written as a fraction, what is the rate of discount? What is this rate expressed as a percent? Round your answer to the *nearest hundredth of a percent*. During the second week of the sale, the same CDs will be on sale for 25% off the *original price*. What is the price of a CD during the second week of the sale?

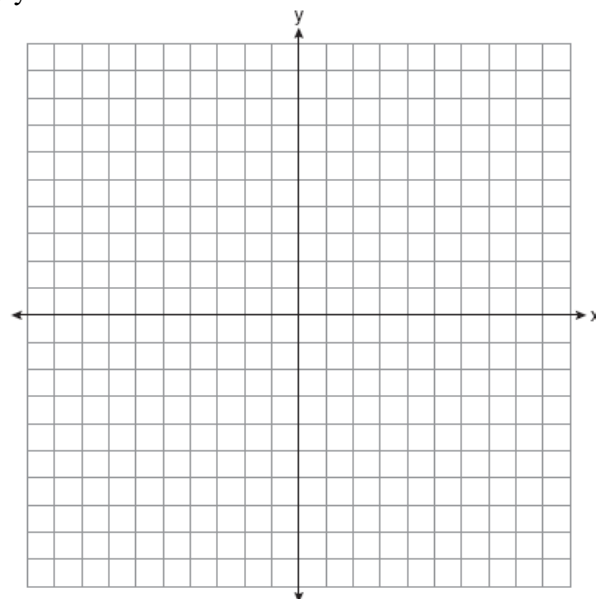
31. Graph the equation $y = x^2 - 2x - 3$ on the accompanying set of axes. Using the graph, determine the roots of the equation $x^2 - 2x - 3 = 0$.



32. In a game of ice hockey, the hockey puck took 0.8 second to travel 89 feet to the goal line. Determine the average speed of the puck in feet per second.

33. Express the product of $3\sqrt{20}(2\sqrt{5} - 7)$ in simplest radical form.

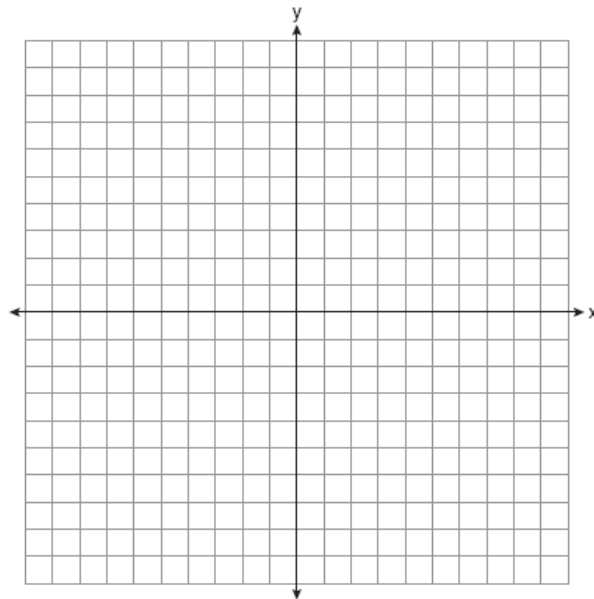
34. On the set of axes below, draw the graph of $y = 2^x$ over the interval $-1 \leq x \leq 3$. Will this graph ever intersect the x -axis? Justify your answer.



35. Write an equation that represents the line that passes through the points $(5, 4)$ and $(-5, 0)$.
36. The cost of 3 markers and 2 pencils is \$1.80. The cost of 4 markers and 6 pencils is \$2.90. What is the cost of *each* item? Include appropriate units in your answer.
37. On the set of axes below, solve the following system of equations graphically and state the coordinates of all points in the solution set.

$$y = x^2 + 4x - 5$$

$$y = x - 1$$



38. Simplify: $\frac{27k^5m^8}{(4k^3)(9m^2)}$
39. The table below represents the number of hours a student worked and the amount of money the student earned.

Number of Hours (<i>h</i>)	Dollars Earned (<i>d</i>)
8	\$50.00
15	\$93.75
19	\$118.75
30	\$187.50

40. Write an equation that represents the number of dollars, d , earned in terms of the number of hours, h , worked. Using this equation, determine the number of dollars the student would earn for working 40 hours.

41. Perform the indicated operation and simplify: $\frac{3x+6}{4x+12} \div \frac{x^2-4}{x+3}$

42. A soup can is in the shape of a cylinder. The can has a volume of 342 cm^3 and a diameter of 6 cm. Express the height of the can in terms of π . Determine the maximum number of soup cans that can be stacked on their base between two shelves if the distance between the shelves is exactly 36 cm. Explain your answer.

43. Solve the following system of equations algebraically:

$$3x + 2y = 4$$

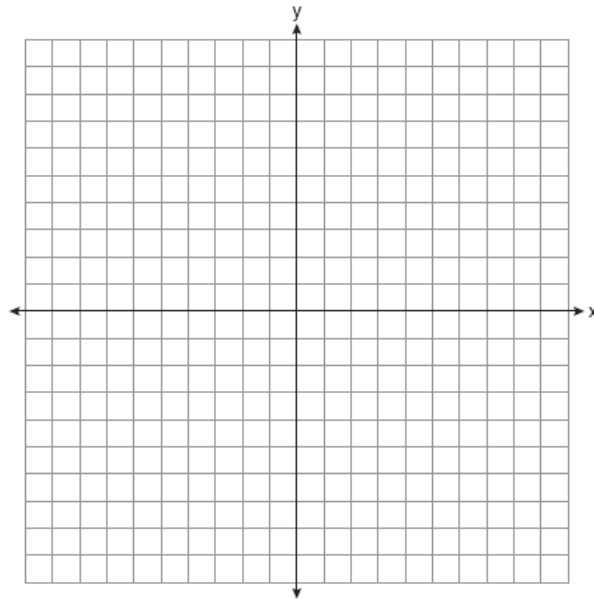
$$4x + 3y = 7$$

[Only an algebraic solution can receive full credit.]

44. On the set of axes below, graph the following system of inequalities and state the coordinates of a point in the solution set.

$$2x - y \geq 6$$

$$x > 2$$



45. Factor completely: $4x^3 - 36x$

46. Some books are laid on a desk. Two are English, three are mathematics, one is French, and four are social studies. Theresa selects an English book and Isabelle then selects a social studies book. Both girls take their selections to the library to read. If Truman then selects a book at random, what is the probability that he selects an English book?

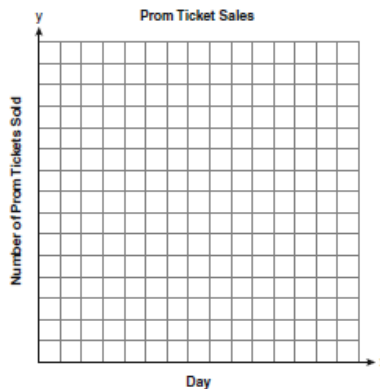
47. A bank is advertising that new customers can open a savings account with a $3\frac{3}{4}\%$ interest rate compounded annually. Robert invests \$5,000 in an account at this rate. If he makes no additional deposits or withdrawals on his account, find the amount of money he will have, to the nearest cent, after three years.

48. The table below shows the number of prom tickets sold over a ten-day period.

Prom Ticket Sales

Day (x)	1	2	5	7	10
Number of Prom Tickets Sold (y)	30	35	55	60	70

49. Plot these data points on the coordinate grid below. Use a consistent and appropriate scale. Draw a reasonable line of best fit and write its equation.



50. A stake is to be driven into the ground away from the base of a 50-foot pole, as shown in the diagram below. A wire from the stake on the ground to the top of the pole is to be installed at an angle of elevation of 52° .

