Student Name: _____

Day 1 Problems #1-5 FA.AAPR.1, FA.NRNS.3	Day 2 Problems #6-10 FA.AAPR.1, FA.NQ.3	Day 3 Problems #11-15 FA.ACE.1	Day 4 Problems #16-20 FA.ACE.1	Day 5 Problems #21-25 FA.AREI.10, FA.ACE.1, FA.ARIE.3
Day 6 Problems #26-30 FA.ACE.1, FA.ACE.2, FA.ACE.4	Day 7 Problems #31-35 FA.ACE.4, FA.AREI.1	Day 8 Problems #36-40		

Foundations in Algebra

School Closing Work Packet

[redacted]

For each problem you must justify your answer choice by either:

- showing the mathematical calculation you used

[redacted]

For Example:

1. Which expression is equivalent to: $2(3x-4)+9x+7$?

A. $15x+3$ **B.** $15x-1$ **C.** $12x+3$ **D.** $24x+6$

[redacted]

2. Which of the following is a linear function?

A. $y=15xy+3$ **B.** $15x+y^2=-1$ **C.** $y=12x^2+3$ **D.** $24x+6$

Explaining the correct answer choice

[redacted]

3. Which of the following is not a rational number?

A. 15 **B.** $\sqrt{3}$ **C.** $\frac{12}{13}$ **D.** $4.\overline{3}$

[redacted]

[redacted]

Foundations School Closing Packet

Name: **Date:**

Part 1.

1. Which point is located closest to $-\frac{7}{10}$ on the number line below?

2. Between which two consecutive integers is the value of this irrational number?

$\sqrt{117}$

A. 8 and 9 B. 10 and 11

3. Which expression is equivalent to $2(3g-4)-(8g+3)$?

A. $-2g-1$ B. $-2g-5$

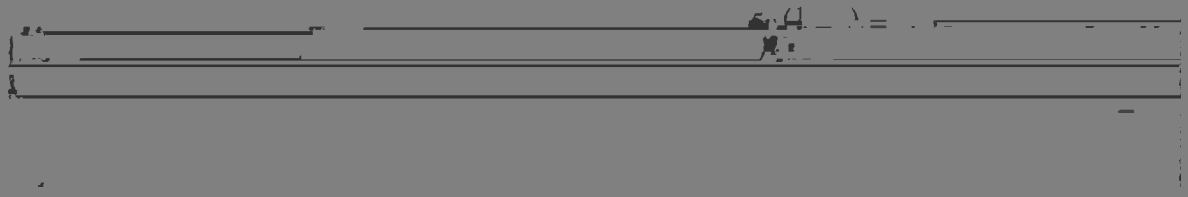
C. $-2g-7$ D. $-2g-11$

4. The expression below represents Brianna's age in terms of m, Molly's age.

$3m-5$

Which of the following statements must be true?

5. Simplify the expression.



6. Simplify the expression $2x(5+y)$.

A. $7x+y$ B. $7x+2xy$

7. Simplify the expression below

[redacted]

8. Simplify: $6b + 4a + 3a - 2b$

A. $4b + 7a$ B. $11ab$

C. $9a - 2b$ D. $10a + b$

9. Simplify: $6(a - 2b) + 3(4a + b)$

A. $18a - 15b$ B. $18a - 11b$

C. $18a - 9b$ D. $18a - b$

10. The original price for a jacket is \$124.95. It is on sale for 20% off. Which of the following gives the best estimate of the savings?

A. [redacted] B. [redacted]

11. A coyote runs at a top speed of 43 miles per hour

[redacted]

A. 18 B. 61 C. 52 D. 104

12. Solve each of the unknowns in the equations below:

$4 \cdot n = 672$

A. 42 B. 168 C. 668 D. 2688

13. Solve each of the unknowns in the equations below:

$x - 76 = 102$

A. 26 B. 34 C. 36 D. 178

14. Solve each of the unknowns in the equations

[redacted]

A. 45 B. 50 C. 55 D. 1555

A. -33 B. -8 C. 8 D. 33

16. [redacted]

=

A. $x = 2$ B. $x = 5\frac{1}{5}$

C. $x = 5$ D. $x = \frac{1}{2}$

17. Solve for x.

$3x + 7 = 2x$.

A. $x = \frac{5}{7}$ B. $x = -\frac{5}{7}$

C. $x = -7$ D. $x = 7$

18. Look at the equation.

$$\frac{n}{9} + 10.36 = 25.36$$

What is the value of n?

A. 15 B. 135

C. 218.88 D. 321.48

19. What is the solution to the equation below?

$$3(x - 4) = 5x - 6$$

A. $x = -3$ B. $x = \frac{3}{4}$

C. $x = 1$ D. $x = 9$

20. What is the solution to the equation below?

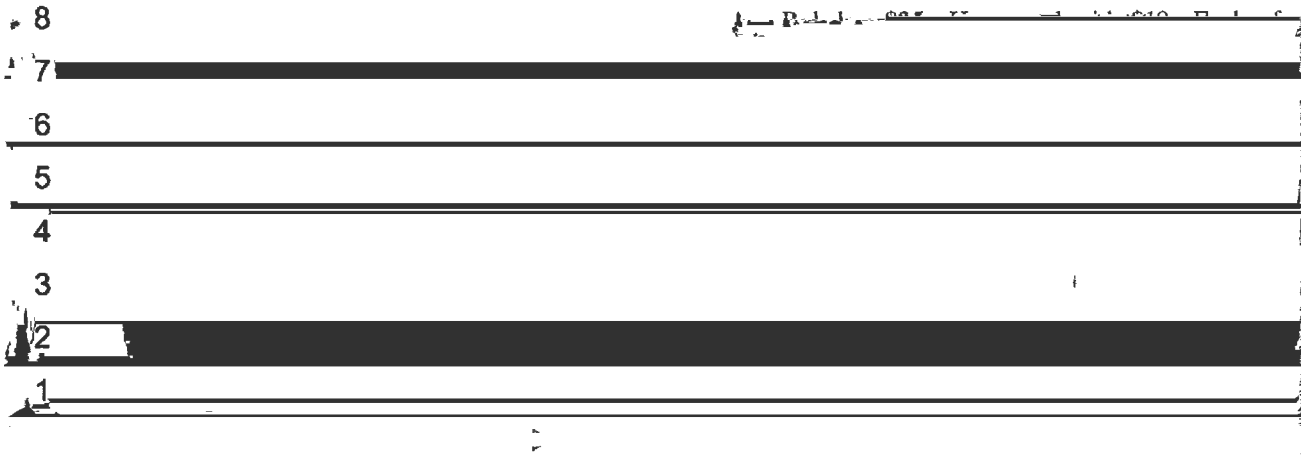
$$\frac{x}{4} = \frac{x + 1}{3}$$

A. $x = -4$ B. $x = -1$

C. $x = \frac{1}{7}$ D. $x = \frac{4}{7}$

21. Palm Elementary School planned a Family Math Night. The location of the activities is shown on the grid below.

Family Math Night Activity



Great Gra hs

A. Crazy Calculators B. Fun Fractions

C. Great Graphs D. Patterns Please

Part 2.

22. Which problem situation is represented by the equation: $10 + 5x = 25$?

his 5 friends gave him the same amount of money (x). How much money did each friend give Bob?

23. Ben bought 8 notebooks for $24.50. Some of the

notebooks were $2.50 each, and the others were

=

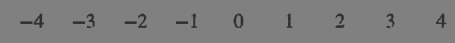
24. Rosa wants to use $20 to buy games. The

[redacted]

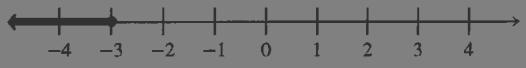
25. Which graph represents the solution of the inequality $-3x + 1 \leq 10$?

A.

B.



C.



D.

26. Joan has a gym gift card worth $100. Each

[redacted]

27 Thomas rented a van for $75 a day plus $0.25

[redacted]

28. Which is an equation of the line that passes through the point $(1, 4)$ and has a slope of 3?

A. $y = 3x + 4$ B. $y = \frac{1}{3}x + 4$

C. $y = 3x - 1$ D. $y = 3x + 1$

30. The formula for electrical power, P, is $P = I^2R$.

[redacted]

33. The formula for the area of a trapezoid is

[redacted]

Part 3.

31. The gravitational potential energy of an object is given by the formula $P = mgh$.

Which equation is correctly solved for the height, h?

A. $h = P + mg$

B. $h = P - mg$

C. $h = \frac{P}{mg}$

D. $h = Pmg$

34. Cooper performs the following steps while solving an equation.

Step 1: $\frac{2}{5}x - 6x = -14$

Step 2: $\frac{5}{2}\left(\frac{2}{5}x - 6x\right) = \frac{5}{2}(-14)$

Which reason supports the work from step 1 to step 2?

A. distributive property

B. associative property

C. addition property of equality

D. multiplication property of equality

32. Which of these is the linear equation $y = \frac{1}{2}x - 4$ expressed in *standard* form?

[redacted]

35. For what value of x will $3x + 4 = x - 6$ be a true

A. $x = -5$

B. $x = -\frac{5}{2}$

C. $x = -1$

D. $x = -\frac{1}{2}$

36. If $x + ay = b$, then y equals

A. $\frac{b-x}{a}$ B. $\frac{b}{x+a}$

C. $b-x-a$ D. $\frac{b-a}{x}$

37. What is the y-intercept for the graph of the equation $3x - 5y = 15$?

A. -5 B. -3 C. 3 D. 5

38. In order for the system of equations: $x + y = 7$ and $y = mx - 4$ to show two parallel lines, then

A. $m = 3$ B. $m = 1$

C. $m = 0$ D. $m = -1$

39. Which point satisfies the equation $2x + 3y = 8$?

A. $(1, 4)$ B. $(2, 2)$

C. $(-1, 3)$ D. $(-2, 4)$

40. Which point is *not* on the line $2x - y = 3$?

A. $(1, -1)$ B. $(-1, -5)$

C. $(3, -3)$ D. $(7, 11)$

41. The point whose coordinates are $(2, -3)$ is on the graph of the equation

A. $2x - 3y = 6$ B. $3x + y = 3$

C. $x + y = 5$ D. $x - y = -1$

42. The graph of which inequality is shown in the accompanying diagram?

A. $y > \frac{1}{2}x + 1$

B. $y \geq \frac{1}{2}x + 1$

C. $y < \frac{1}{2}x + 1$

D. $y \leq \frac{1}{2}x + 1$

Part 4.

43. Harrison reads 15 minutes per day for a project. The total number of minutes Harrison reads for the project is proportional to the number of days since he started the project. The equation shown represents the total number of minutes Harrison has read since he started the project.

$y = 15x$

What does x represent in the equation?

A. The number of days Harrison has read since he started the project.

44 $3a - 18 = 3(a - \square)$

In the equation given, what is the value of $\square$?

A. 6 B. $6a$ C. 18 D. $18a$

45. Which of the following properties is demonstrated by the equation below?

$9(x + 3) = 9x + 27$

A. distributive property

B. inverse property of addition

C. associative property of addition

D. commutative property of addition

Part 5.

47. How does the graph of $f(x) = 2x + 10$ change if the function is changed to $f(x) = -2x + 10$?

A. The graph does not change at all.

B. The y-intercept would be different, but the slope would remain the same.

C. The slope would be different, but the y-intercept would remain the same.

Part 6.

48. Which relation is a function?

A.

Input	Output
1	2
2	2
3	3
4	3

B.

Input	Output
2	6
2	5
6	4
6	3

C.

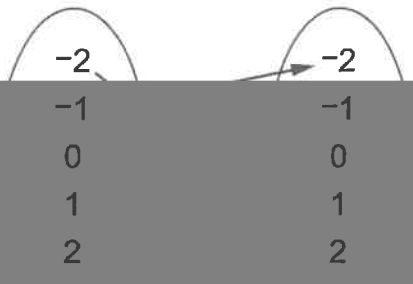
Input	Output
1	2
2	4
4	6
4	8

D.

Input	Output
0	1
0	2
1	3
1	3

40. Which model is not a function?

A.



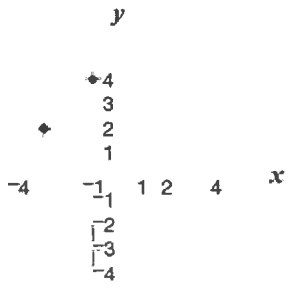
B.

C.

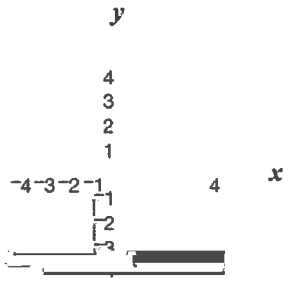
D.

50. Claire plotted the locations of some of her friends' houses on a coordinate grid. The points she plotted created a

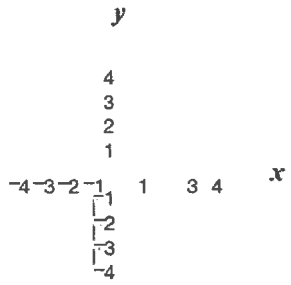
A. **Claire's Friends' Houses**



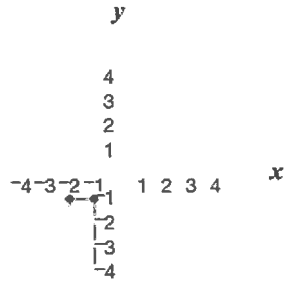
B. **Claire's Friends' Houses**



C. **Claire's Friends' Houses**



D. **Claire's Friends' Houses**



51. Which does *not* represent y as a function of x?

A. $x = y^2 + 2$ B. $y = x^2 + 2$

52. The number of cakes needed for a party, c, is dependent upon the number of guests at the party, g. Which equation shows the number of cakes as a function of the number of guests?

A. $f(c) = \frac{g}{\quad}$ B. $f(g) = \frac{g}{\quad}$