

Algebra 2 L1 Summer Math Packet

Name: _____

Date: _____

1. Which of the following is a rational number?

- A. $\sqrt{2}$ B. $\sqrt{13}$ C. $\sqrt{17}$ D. 23

2. Which of the following numbers can be classified as a whole number, natural number, integer, and rational number?

- A. 4 B. -78 C. 1.5 D. 0

3. Which of these decimals represent(s) a *rational* number?

- I. 0.0787878...
II. 5.432432...
III. 1.23456...
IV. 4.45345345...

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

4. A *rational* number is a number that is—

- A. terminating or repeating
B. non-terminating and repeating
C. non-terminating and non-repeating
D. none of these

5. An *irrational* number is a number that is—

- A. terminating or repeating
B. non-terminating or repeating
C. non-terminating and non-repeating
D. none of these

6. Classify the following list of real numbers by category. (Some numbers may fit in more than one category.)

$$-7 \quad \frac{1}{2} \quad -0.6 \quad 1.67342\dots$$

$$\sqrt{25} \quad 3^2 \quad \frac{5}{11} \quad 12 \quad \sqrt{3} \quad 0$$

Whole	Integer	Rational	Irrational

7. Place a mark in every box that describes the number.

Number	Real	Irrational	Rational	Integer
$\frac{15}{16}$				
$\sqrt{121}$				
$ \pi $				
$-3\frac{5}{8}$				
$-4\sqrt{1}$				
$\sqrt{7}$				

Give reasons for your sorting.

8. Simplify: $-4(a - 3)$

- A. $-4a - 12$ B. $-7a$
 C. $-a$ D. $-4a + 12$

9. Simplify: $2 + 4(x + 6)$

- A. $4x + 26$ B. $4x + 8$
 C. $6x + 36$ D. $6x + 6$

10. Simplify: $(3x + 2)4 + 2x$

- A. $14x + 8$ B. $22x$
 C. $5x + 8$ D. $13x$

11. Which expression is equal to $3(5x - 6) - 2(4x + 5)$?

- A. $7x - 1$ B. $9x - 1$
 C. $9x - 13$ D. $7x - 28$

12. Simplify: $(7x - 5) - (3x - 5)$

- A. $4x$ B. $4x - 10$
 C. $4x^2$ D. $4x^2 - 10$

13. Simplify: $(3x - 4y) + (2x - 5y)$

- A. $5x - y$ B. $5x - 9y$
C. $6x + 20y$ D. $6x^2 + 20y^2$

14. What is the solution to the following equation?

$$2(3x + 5) - 2x + 2 = 0$$

- A. $x = -3$ B. $x = -2$
C. $x = 1$ D. $x = 2$

15. Solve: $x + 3(6 - x) = 20$

- A. -2 B. -1 C. 1
D. no solution

16. Solve: $17j + 22 = -23 + 2j$

- A. -3 B. $-2\frac{1}{9}$ C. $\frac{1}{15}$ D. 5

17. What is the value of x in the following equation?

$$4(2 - x) + 15 = 3(x + 3)$$

- A. 2 B. 3 C. $4\frac{1}{2}$ D. 5

18. The lengths of two sides of a parallelogram are consecutive even integers and the perimeter of the parallelogram is 36 cm. What is the length of the longer side?

- A. 8 cm B. 9 cm
C. 10 cm D. 20 cm

19. Mr. Gerber wants to buy granola bars and saw the following information.

Granola Bars

Number of Boxes	Number of Granola Bars
1	6
2	12
3	18
4	?

How many granola bars are in 4 boxes?

- A. 13 B. 20 C. 24 D. 60

20. Marion attached buttons to a group of shirts. She attached 3 buttons to each shirt. Which table shows the relationship between shirts and buttons?

A.

Shirts	Buttons
5	10
7	15
10	20

B.

Shirts	Buttons
5	15
7	18
10	21

C.

Shirts	Buttons
5	15
7	21
10	30

D.

Shirts	Buttons
5	3
7	9
10	18

21. The table shows the toothpaste tube fill rate of one machine.

Toothpaste Tube Filling

Minutes	2	4	6	8	10
Tubes	80	160	240	320	400

Which of these describes the fill rate per minute?

- A. 20 tubes B. 40 tubes
 C. 80 tubes D. 400 tubes

22. The ratio of cars to trucks in the parking lot is 5 to 4. Which of these could be the actual number of cars and trucks?

- A. 15 cars, 20 trucks
 B. 20 cars, 24 trucks
 C. 8 cars, 10 trucks
 D. 15 cars, 12 trucks

23. At a local hospital 4 out of every 9 doctors are women. If there are 126 doctors at the hospital, how many are women?

- A. 56 B. 60 C. 68 D. 84

24. Simplify $8 - 4 \cdot 2 + 5$ using the correct order of operations.

- A. 0 B. 5 C. 13 D. 28

25. Simplify: $\frac{3 + 3 \cdot 3}{3}$

- A. 2 B. 4 C. 6 D. 9

26. What is $4n + 10n$, if $n = \frac{1}{2}$?
- A. 7 B. 14 C. 15 D. 28

27. Given $a = 48$ and $b = \frac{a}{8} + 3$.

What is the value of b ?

- A. $\frac{45}{8}$ B. 9 C. 11 D. 37

28. Evaluate: $3a^2 - 4a + 2$ when $a = 2$

- A. -12 B. -2 C. 6 D. 10

29. If $a = 4$, what is the value of $4a^2 - 7a - 1$?

- A. 3 B. 30 C. 35 D. 58

30. The cost of the senior trip is \$36 per student. The total cost of the trip is $C = 36n$ dollars, where n is the number of students. What is the cost if 300 students go on the senior trip?

- A. \$1080 B. \$1200
C. \$10,800 D. \$12,800