

Math 6 Practice Test: Expressions, Equations and Inequalities

Name:

Date:

1. Define *base* and give an example.

2. Define *numeric expression* and give an example.

3. Define *inequality* and give an example.

4. Define *variable* and give an example.

5. List the set of rules for the Order of Operations.

6. Which of the following shows the expression $5 \times 5 \times 5$ in exponential form?
 - A. 125
 - B. 555
 - C. 3^5
 - D. 5^3

7. Which is the greatest?

A.	2^4
B.	3^3
C.	4^2
D.	5^1

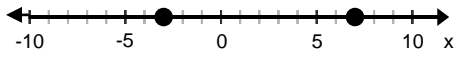
8. What is the value of the expression $8 + 24 \div 4 \times 3 - 2$? Show your work.
- A.** 8
B. 14
C. 22
D. 24
9. Evaluate: $8 \div (1 + 3) \times 5^2 - 2$. Show your work.
10. Which of the following correctly shows the use of the Distributive Property to find the product of 9 and 25?
- A.** $9 \times 25 = (9 \times 20) + (9 \times 5)$
B. $9 \times 25 = 25 \times 9$
C. $9 \times 25 = 9 + (20 + 5)$
D. $9 \times 25 = (9 \times 20) \times 5$

For problems 11- 13, write each phrase as a numerical or algebraic expression.

11. Five less than a number
12. The quotient of 49 and a number
13. Two less than three times a number
14. Identify the correct word translation for $x \leq 6$.
- A.** x is less than six
B. x is less than or equal to six
C. x is greater than six
D. x is greater than or equal to six
15. Evaluate the expression to find the missing values in the table. Show your work.

x	$3x + 2^3$
10	38
15	?
20	?

16. Write in inequality for the numbers graphed on the number line below.



17. What is the value of the expression $4n + 7$ when $n = 2$? Show your work.

- A. 15
- B. 36
- C. 42
- D. 49

18. Fill in the missing term; then write an expression that describes the relationship shown in the chart.

Term	1	2	3	4	5
Value of Term	4	7	10	13	?

Missing term: _____

Expression: _____

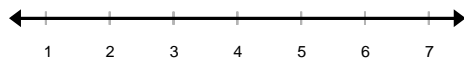
19. Solve the equation for x : $x + 4 = 10$. Show your work.

20. Find the solution for the equation $4y = 28$. Show your work.

21. For which equation is $x = 4$ a solution? Show your work.

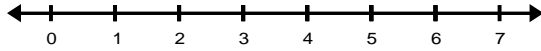
- A. $15 - x = 4$
- B. $4 + x = 12$
- C. $x + 4 = 8$
- D. $x - 4 = 4$

22. Look at the graph below. Which inequality describes the graph?



- A. $n < 3$
- B. $n > 3$
- C. $n \leq 3$
- D. $n \geq 3$

23. Solve and graph the solution for $x + 5 > 9$. Show your work.



24. Carmen babysits to earn money. The relationship between the numbers of hours she babysits one child and the total amount of money she earns is shown in the table below.

Number of Hours	Total Amount of Money Earned (dollars)
1	8
2	16
3	24
4	32

- A** Using words, write a rule that describes the relationship between the number of hours Carmen babysits one child and the total amount of money she earns.
- B** Carmen can babysit two children at a time. When she babysits two children, she earns one and a half times as much money each hour as when she babysits one child. Create a table that shows the amount of money Carmen earns babysitting two children at a time for 1, 2, 3, and 4 hours. Explain or show how you determined the amount of money Carmen earns.

A large grid consisting of 20 columns and 20 rows, intended for the student to write their explanation and table for part B of question 24.

25. Given three numbers you are told only that the first number called x is located on the number line to the left of the other two numbers. The second number called y is located on the number line to the right of the other two numbers. The third number called z is to the left of y . Order the given numbers x , y and z and write a mathematical statement using $<$, $>$ or $=$ signs. Explain your thinking.

Long term memory review:

26. Solve. $43 \overline{)7,525}$

27. Solve. $4\frac{2}{3} \div 4\frac{1}{2} =$

28. Solve. $(-42) - (+25) =$

29. Newly manufactured showerheads use 2.5 gallons of water per minute. Complete the table below and plot the values on the graph provided.

Time (minutes)	Water Used (gallons)
1	
2	
3	
5	
8	
10	

