1. The identity property that uses 1 applies to _____.
   - A: × and ÷
   - B: + and –
   - C: – and ÷
   - D: none of the above

2. In the order of operations, if there are no parentheses, _____ first.
   - A: + or –
   - B: × or ÷
   - C: both A and B
   - D: none of the above

3. The value of 6 × (7 + 8) is _____.
   - A: 42 + 48
   - B: 6 × 15
   - C: 90
   - D: all of the above

4. In 5^2, the 2 is the _____.
   - A: base number
   - B: order
   - C: exponent
   - D: none of the above

5. In 4 - x = 4, the _____ property applies.
   - A: commutative
   - B: associative
   - C: identity
   - D: none of the above

6. 10 nickels = _____ quarters.
   - A: 2
   - B: 5
   - C: 3
   - D: none of the above

7. 3 quarters = _____ nickels.
   - A: 5
   - B: 10
   - C: 15
   - D: none of the above

8. The ratio of nickels to quarters is _____.
   - A: 1:5
   - B: 5:1
   - C: 5 – 1
   - D: none of the above

9. Each soccer team has 11 players. What is the ratio of players to teams?
   - A: 10:1
   - B: 12:1
   - C: 11:1
   - D: none of the above

10. There are 9 soccer teams at the tournament. How many players are there?
    - A: 20
    - B: 2
    - C: 100
    - D: none of the above
Complete the tables. Use them to answer problems 21–23.

<table>
<thead>
<tr>
<th>Table A</th>
<th>Table B</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ a ]</td>
<td>[ b ]</td>
</tr>
<tr>
<td>[ a + 2 ] 3</td>
<td>[ 2b ] 2</td>
</tr>
</tbody>
</table>

21. In Table A, the values for \( a + 2 \) are _____ numbers.
   A) always odd  B) always even  C) odd and even  D) none of the above

22. In Table B, the values for \( 2b \) are _____ numbers.
   A) always odd  B) always even  C) odd and even  D) none of the above

23. The values of \( a \) and \( b \) are located on the _____ of a coordinate graph.
   A) \( x \)-axis  B) \( y \)-axis  C) origin  D) none of the above

24. 
   \[ -1, 1, -2, 2, -3, \ldots \]
   A) 3, –4, 4  B) –4, –5, –6  C) 3, 4, 5  D) none of these

25. 
   \[ 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0, \ldots \]
   A) \[ \frac{11}{12}, \frac{10}{11}, \frac{9}{10} \]  B) \[ \frac{13}{14}, \frac{15}{16}, \frac{17}{18} \]  C) \[ \frac{10}{9}, \frac{8}{7} \]  D) none of these

26. 
   \[ .2, .4, .6, .8, 1.0, \ldots \]
   A) 2.0, 3.0  B) 10, 20  C) 1.3, 1.5  D) none of these

27. What is the value of \( x \) when \( x^2 = 100 \)?
   A) 0  B) 1  C) 10  D) none of the above

28. The distance between (1,6) and \((-1,6)\) on a coordinate graph is _____ units.
   A) 12  B) 6  C) 0  D) none of the above
9. In $5^3$, the 5 is the _______.
   - A exponent
   - B order
   - C base number
   - D none of the above

10. An exponent is the number of times the base number is _______.
    - A multiplied
    - B subtracted
    - C added
    - D none of the above

11. Powers of 10, exponents with 10 as the base number, show _______.
    - A place value
    - B squares
    - C roots
    - D none of the above

12. The exponent with a base number of 10 is the _______ in the place value.
    - A number of 0s
    - B number of 1s
    - C number of 5s
    - D all of the above

13. The identity factor for subtraction is 2.
    - A True
    - B False

14. $n \div 3 = n$ is an example of the associative property.
    - A True
    - B False

15. $(7 + 3) + 4 = 7 + (3 + 4)$ is an example of the associative property.
    - A True
    - B False

16. Properties of operations are laws that apply to them.
    - A True
    - B False

17. In a list of different operations, perform the same operation from right to left.
    - A True
    - B False

18. The associative property uses order and parentheses to define equal expressions.
    - A True
    - B False

19. $20 \div 10 = (10 \div 10) + (10 \div 10)$ is an example of the distributive property.
    - A True
    - B False

20. The identity factor for multiplication is 0.
    - A True
    - B False
Exponents

$7^2 = 7$ squared

7 is the base number.

2 is the exponent for the number of times the base number is multiplied.

$7 \times 7 = ____$

$4^3 = 4$ cubed

4 is the base number.

3 is the exponent for the number of times the base number is multiplied.

$4 \times 4 \times 4 = ____$
11. \[9 + (3 \times 2) + (10 \div 5) = _____\] (A) 15 (B) 16 (C) 17 (D) 18

12. In \(5^4\), the 4 is the _____.
   (A) product (B) exponent (C) factor (D) divisor

13. In \(7^3\), the 7 is the _____.
   (A) product (B) sum (C) difference (D) base number

14. \(6^3 = _____\) (A) 18 (B) 216 (C) 9 (D) 108

15. \(4^2\) is _____ \(5^2\).
   (A) 9 less than (B) 2 less than (C) 9 greater than (D) 2 greater than

16. \(10^3 = _____\) (A) 1,000 (B) 100 (C) 30 (D) 13

17. \(3^4\) is _____ \(3 \times 4\).
   (A) equal to (B) 69 greater than (C) 69 less than (D) 24 greater than

18. \(70,000 = _____\) (A) \(7 \times 10^5\) (B) \(7 \times 10^4\) (C) \(70 \times 10\) (D) \(700 \times 1\)

19. \(10^2 \times 10^3 = _____\) (A) \(10^6\) (B) \(10^1\) (C) \(10^4\) (D) \(10^5\)

20. Exponents are used in writing _____.
   (A) large numbers (B) scientific notation (C) both A and B (D) none of the above
1. A cake recipe calls for 3 cups of flour and 2 cups of oil. Show the ratio of oil to flour. 

   \[
   \frac{2}{3}
   \]

A. How many cups of oil are needed for 4 cakes?

   [Blank]

B. How many cakes can be made with 6 cups of flour?

   [Blank]

2. A motorcycle travels 300 miles on 4 gallons of gasoline. A car travels 300 miles on 10 gallons of gasoline. Show both ratios.

   \[
   \frac{300}{4} = \frac{75}{1} \quad \text{motorcycle}
   \]

   \[
   \frac{300}{10} = \frac{30}{1} \quad \text{car}
   \]

A. How far does the motorcycle travel on 10 gallons of gasoline?

   [Blank]

B. How far does the car travel on 4 gallons of gasoline?

   [Blank]
1. A ratio compares ______ quantities or amounts.
   - A: 2
   - B: 3
   - C: 4
   - D: none of the above

2. A ratio can be expressed as ______.
   - A: 2:3
   - B: 2 to 3
   - C: \( \frac{2}{3} \)
   - D: all of the above

3. A rate is a ______.
   - A: race
   - B: type of ratio
   - C: rank
   - D: none of the above

4. Pencils | 5 | 10 | \( n \)  
   Pens   | 3 | 6  | 9
   \[ n = \]
   - A: 11
   - B: 12
   - C: 13
   - D: none of the above

5. Weeks  | 1 | 2 | 3 | \( n \)  
   Days    | 7 | 21|
   \[ n = \]
   - A: 14
   - B: 4
   - C: 28
   - D: none of the above

6. Minutes | \( n \)  
   Hours   | 3
   \[ n = \]
   - A: 60
   - B: 120
   - C: 180
   - D: none of the above

7. Quarters | \( n \)  
   Nickels  | 125
   \[ n = \]
   - A: 24
   - B: 25
   - C: 26
   - D: none of the above

8. Bottles | 3 | \( n \)  
   Dollars  | 5 | 15
   \[ n = \]
   - A: 10
   - B: 5
   - C: 4
   - D: none of the above
1. Label each quadrant as a direction.

2. Label the $x$-axis as Main Street.

3. Label the $y$-axis as Central Avenue.

4. From the origin on the $x$-axis, the numbers to the right are east, the numbers to the left are west.

5. From the origin on the $y$-axis, the numbers at the top are north, the numbers at the bottom are south.

6. Each number is 1 block.
Write an example of how each expression might be used.

1. \(5.75 \cdot x\) ________________________________
   ________________________________
   ________________________________

2. \(640 - a\) ________________________________
   ________________________________
   ________________________________

3. \(\frac{1}{2} + n\) ________________________________
   ________________________________
   ________________________________

4. \(p \div \frac{1}{3}\) ________________________________
   ________________________________
   ________________________________

How are each pair of expressions different?

5. \(84 - y\) and \(y - 84\) ________________________________
   ________________________________
   ________________________________

6. \(t + t + t\) and \(3t\) ________________________________
   ________________________________
   ________________________________
Write an example of how each expression might be used.

1. $5.75x$

2. $(640 - a)$

3. $\frac{1}{2} + n$

4. $p + \frac{1}{3}$

How are each pair of expressions different?

5. $84 - y$ and $y - 84$

6. $t + t + t$ and $3t$
When $y = 1$, $4y + 1 = \underline{\hspace{2cm}}$.
When $y = 2$, $4y + 1 = \underline{\hspace{2cm}}$.
When $y = 3$, $4y + 1 = \underline{\hspace{2cm}}$.
When $y = 4$, $4y + 1 = \underline{\hspace{2cm}}$.

When $c = 0$, $\frac{1}{2}c + 5 = \underline{\hspace{2cm}}$.
When $c = 2$, $\frac{1}{2}c + 5 = \underline{\hspace{2cm}}$.
When $c = 4$, $\frac{1}{2}c + 5 = \underline{\hspace{2cm}}$.
When $c = 6$, $\frac{1}{2}c + 5 = \underline{\hspace{2cm}}$.

For which value of $x$ does $7x - 2 = 12$?

- $x = 0$
- $x = 1$
- $x = 2$

For which value of $w$ does $30 - 3w = 15$?

- $w = 0$
- $w = 5$
- $w = 10$

What value of $x$ makes $0.25p + 1 = 2.25$?

- $p = 3$
- $p = 4$
- $p = 5$

What value of $b$ makes $2b - 0.5 = 11.5$?

- $b = 2$
- $b = 4$
- $b = 6$
1. 
\[ \text{\$5} - \text{\$1.25} + \text{\$4} - \text{\$1.50} + \text{\$3} - ____ + ____ \]

Describe the pattern using words.
I had \$5. I spent \$1.25. I earned \$4. I bought some stamps for \$1.50. I received \$3 from my grandmother. I gave ______ to my brother for lunch money.

The pattern is ________________________________

2. 

Complete this pattern on the number line. Start at 0.
Describe the pattern on the number line. Use "right" and "left" in your description.

3. 
\[ \frac{1}{5}, 2, \frac{2}{5}, 4, \frac{3}{5}, \ldots \]

Describe the pattern.

______________________________