

1. The identity property that uses 1 applies to \_\_\_\_\_.

(A)  $\times$  and  $\div$   
 (B)  $+$  and  $-$   
 (C)  $-$  and  $\div$   
 (D) none of the above

2. In the order of operations, if there are no parentheses, \_\_\_\_\_ first.

(A)  $+$  or  $-$   
 (B)  $\times$  or  $\div$   
 (C) both A and B  
 (D) none of the above

3. The value of  $6 \times (7 + 8)$  is \_\_\_\_\_.

(A)  $42 + 48$   
 (B)  $6 \times 15$   
 (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

Complete the table. Use the table to answer questions 6-8.

quarters	1		3
nickels	5	10	

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 A

$a$	1			
$a+2$	3			

Table B

$b$	1			
$2b$	2			

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. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
 (A) 3, -4, 4 (B) -4, -5, -6 (C) 3, 4, 5 (D) none of these

25. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
 (A)  $\frac{11}{12}, \frac{10}{11}, \frac{9}{10}$  (B)  $\frac{10}{11}, \frac{8}{9}, \frac{6}{7}$  (C)  $\frac{13}{14}, \frac{15}{16}, \frac{17}{18}$  (D) none of these

26. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
 (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 \_\_\_\_\_.  
 (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

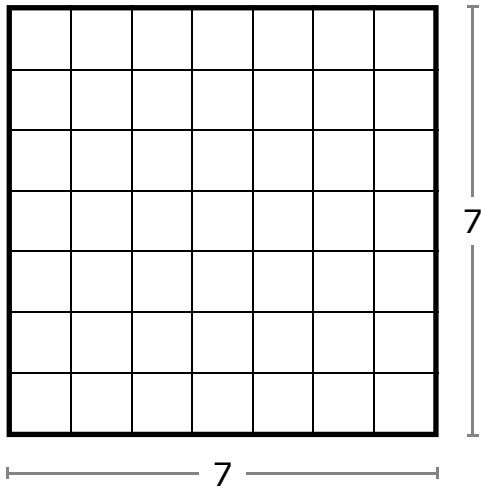
19.  $20 \div 10 = (10 \div 10) + (10 \div 10)$  is an example of the distributive property.

(A) True  
 (B) False

20. The identity factor for multiplication is 0.

(A) True  
 (B) False

## Exponents

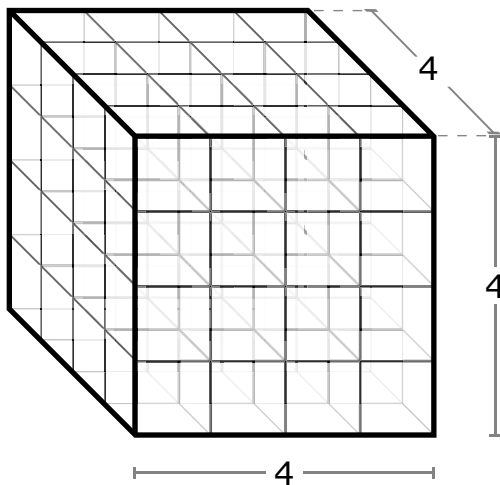


$$7^2 = 7 \text{ squared}$$

7 is the base number.

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

$$7 \times 7 = \underline{\hspace{2cm}}$$



$$4^3 = 4 \text{ cubed}$$

\_\_\_\_\_ is the base number.

\_\_\_\_\_ is the exponent for the number of times the base number is multiplied.

$$4 \times 4 \times 4 = \underline{\hspace{2cm}}$$

11.  $9 + (3 \times 2) + (10 \div 5) = \underline{\hspace{2cm}}$       (A) 15      (C) 17  
(B) 16      (D) 18
- 
12. In  $5^4$ , the 4 is the \_\_\_\_\_.      (A) product      (C) factor  
(B) exponent      (D) divisor
- 
13. In  $7^3$ , the 7 is the \_\_\_\_\_.      (A) product      (C) difference  
(B) sum      (D) base number
- 
14.  $6^3 = \underline{\hspace{2cm}}$       (A) 18      (C) 9  
(B) 216      (D) 108
- 
15.  $4^2$  is \_\_\_\_\_  $5^2$ .      (A) 9 less than      (C) 2 less than  
(B) 9 greater than      (D) 2 greater than
- 
16.  $10^3 = \underline{\hspace{2cm}}$       (A) 1,000      (C) 30  
(B) 100      (D) 13
- 
17.  $3^4$  is \_\_\_\_\_  $3 \times 4$ .      (A) equal to      (C) 69 less than  
(B) 69 greater than      (D) 24 greater than
- 
18.  $70,000 = \underline{\hspace{2cm}}$       (A)  $7 \times 10^5$       (C)  $70 \times 10$   
(B)  $7 \times 10^4$       (D)  $700 \times 1$
- 
19.  $10^2 \times 10^3 = \underline{\hspace{2cm}}$       (A)  $10^6$       (C)  $10^4$   
(B)  $10^1$       (D)  $10^5$
- 
20. Exponents are used in writing \_\_\_\_\_.      (A) large numbers      (C) both A and B  
(B) scientific notation      (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. : \_\_\_\_\_

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

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

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

motorcycle = \_\_\_\_\_ : \_\_\_\_\_      car = \_\_\_\_\_ : \_\_\_\_\_

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

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

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.

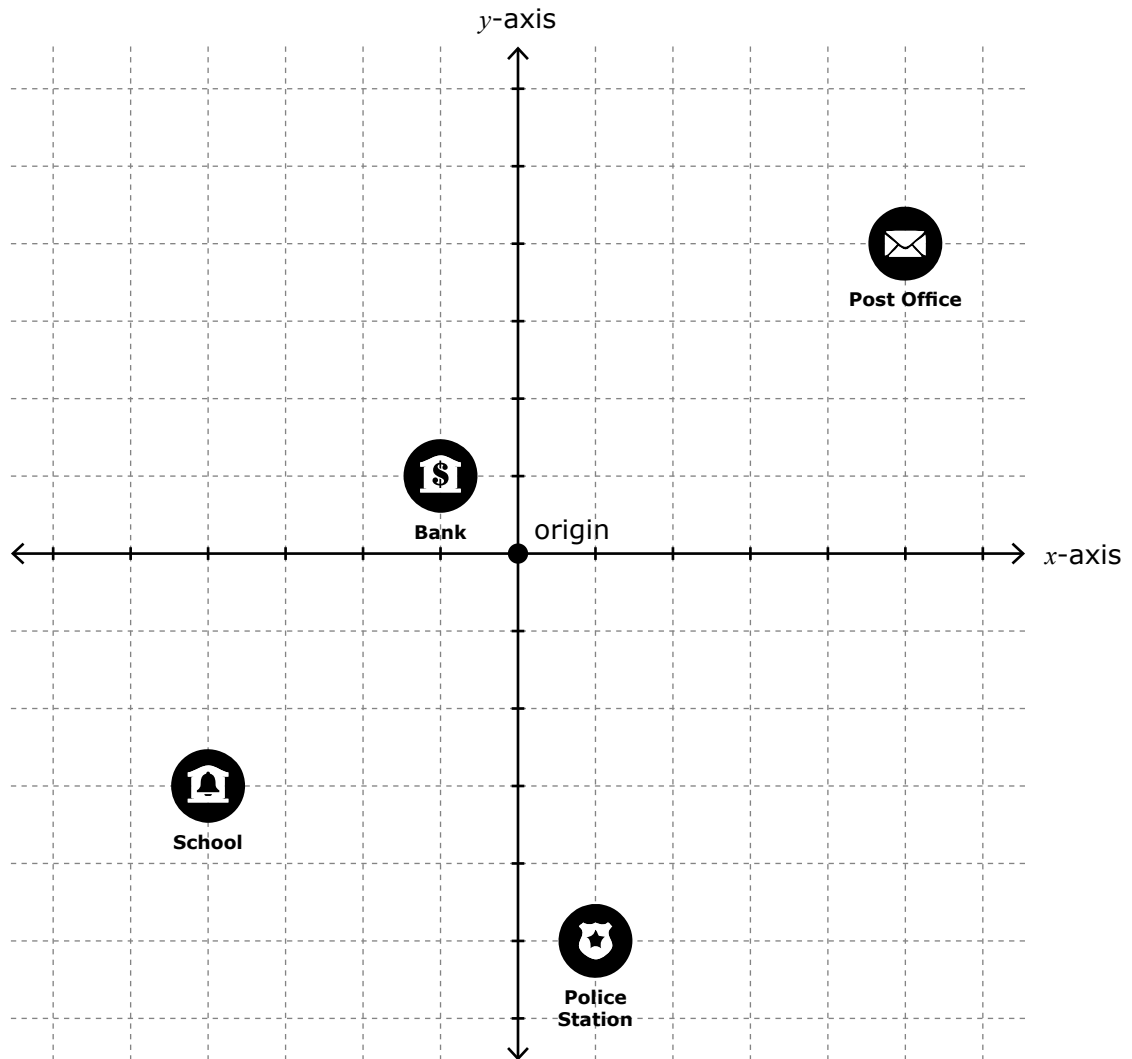
Bottles			3		$n$
Dollars			5		15

$n =$

(A) 10  
(B) 5  
(C) 4  
(D) none of the above

## City Map of Elizabeth

(Use with activity sheet 70)



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.  $\$5.75x$  \_\_\_\_\_  
\_\_\_\_\_

2.  $(640 - a)$  \_\_\_\_\_  
\_\_\_\_\_

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

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

4.  $p \div \frac{1}{3}$  \_\_\_\_\_  
\_\_\_\_\_

How are each pair of expressions different?

5.  $84 - y$  and  $y - 84$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6.  $t + t + t$  and  $3t$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

$$4y + 1$$

When  $y = 1$ ,  $4y + 1 =$  \_\_\_\_\_.

When  $y = 2$ ,  $4y + 1 =$  \_\_\_\_\_.

When  $y = 3$ ,  $4y + 1 =$  \_\_\_\_\_.

When  $y = 4$ ,  $4y + 1 =$  \_\_\_\_\_.

$$\frac{1}{2}c + 5$$

When  $c = 0$ ,  $\frac{1}{2}c + 5 =$  \_\_\_\_\_.

When  $c = 2$ ,  $\frac{1}{2}c + 5 =$  \_\_\_\_\_.

When  $c = 4$ ,  $\frac{1}{2}c + 5 =$  \_\_\_\_\_.

When  $c = 6$ ,  $\frac{1}{2}c + 5 =$  \_\_\_\_\_.

$$7x - 2$$

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

- (A)  $x = 0$
- (B)  $x = 1$
- (C)  $x = 2$

$$30 - 3w$$

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

- (A)  $w = 0$
- (B)  $w = 5$
- (C)  $w = 10$

$$.25p + 1$$

What value of  $x$  makes  
 $.25p + 1 = 2.25$ ?

- (A)  $p = 3$
- (B)  $p = 4$
- (C)  $p = 5$

$$2b - .5$$

What value of  $b$  makes  
 $2b - .5 = 11.5$ ?

- (A)  $b = 2$
- (B)  $b = 4$
- (C)  $b = 6$

1.

$$\underline{\$5} - \underline{\$1.25} + \underline{\$4} - \underline{\$1.50} + \underline{\$3} - \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$$

Describe the pattern using words.

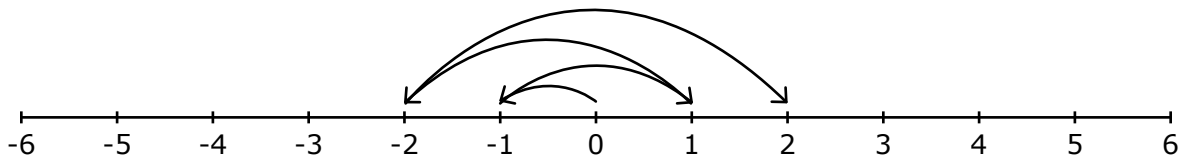
I had \$5. I spent \$1.25. I earned \$4. I bought some stamps for \$1.50. I received \$3 from my grandmother. I gave \_\_\_\_\_ to my brother for lunch money.

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.

$$\underline{\frac{1}{5}}, \underline{2}, \underline{\frac{2}{5}}, \underline{4}, \underline{\frac{3}{5}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$$

Describe the pattern.

\_\_\_\_\_

\_\_\_\_\_