

# Station #1 – Unit 1

Evaluate each numerical expression.

1. $(-5)(7)$	2. $11 + (-12)$	3. $-20 + 45$	4. $-100 \div -4$
5. $(-2)(8)(-3)$	6. $-\sqrt{25} + 21 \div -3$	7. $6 - 11 + (-2)^3$	8. $(3 - 19) \div  -1 - 7 $

9. Evaluate  $x - y$  when  $x = 13$  and  $y = -12$

10. Evaluate the algebraic expression  $\frac{b^2}{a} + -c$  when  $a = 2$ ,  $b = -6$  and  $c = -3$

For #'s 11 – 20, identify the property illustrated by the statement.

11.  $(x)(y) = (y)(x)$

12.  $-4 + 0 = -4$

13.  $(-3 + 4) + 5 = -3 + (4 + 5)$

14.  $a(b - c) = ab - ac$

15.  $\frac{3}{5} \cdot \frac{5}{3} = 1$

16.  $p + q = q + p$

17.  $m \cdot 0 = 0$

18.  $(-7)(1) = -7$

19.  $28 + (-28) = 0$

20.  $(cd)e = c(de)$

For #'s 21 – 24, state the most specific set to which each number belongs.

21.  $-\frac{4}{9}$

22. 0

23.  $\sqrt{22}$

24. 89

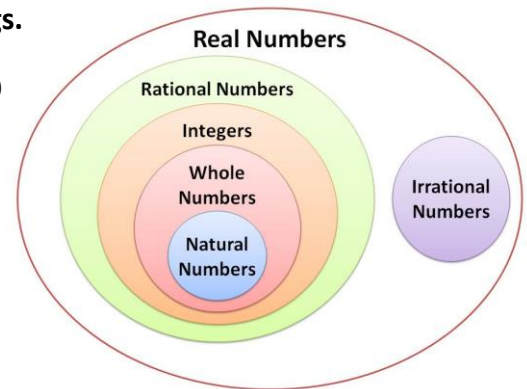
25. Name every number set that **-10** belongs to.

26. Which *irrational number* below is closest in value to the number 6?  
Justify your response.

A.  $\sqrt{27}$

B.  $\sqrt{6}$

C.  $\sqrt{33}$



For #'s 27 – 29, write and evaluate an integer expression to answer the question.

27. A submarine hovers at 140 meters below sea level. If it descends 250 meters, what is its new position?

28. Your current balance in a savings account is \$75. You make a deposit of \$55 in the morning and then later in the afternoon, you withdraw \$130. If these are the only transactions that took place, determine the new balance.

29. The temperature was  $-4^{\circ}\text{F}$  this morning. By the end of the day, the temperature was  $16^{\circ}\text{F}$ . What was the change in temperature?

## Station #2 – Unit 2

Evaluate each numerical expression.

1. $\left(-\frac{3}{4}\right)^2$	2. $-2.4 \div 4$	3. $2\frac{1}{3} - 5\frac{1}{6}$
4. $-\frac{5}{8} + \left(-\frac{1}{2}\right) \times \frac{4}{3}$	5. $(-5.4 + 6.2)(0.4 - 1.3)$	6. $-4\frac{1}{6} \div 5 \times \left(-\frac{2}{5}\right)$

7. Evaluate  $\frac{ab}{c}$  when  $a = 0.5$ ,  $b = 24$  and  $c = -\frac{9}{10}$

For #'s 8 – 11, determine if each statement is true or false. If false, rewrite the statement to make it true.

8. The *additive inverse* of -5 is 5

9. The *multiplicative inverse* of  $-\frac{2}{11}$  is  $\frac{11}{2}$

10. The *absolute value* of 7.5 is -7.5

11. The *reciprocal* of  $2\frac{3}{4}$  is  $2\frac{4}{3}$

12. Use long division to determine the decimal equivalent of  $\frac{15}{11}$ .

13. Yesterday, the temperature at noon was 11.4°F. By midnight, the temperature had decreased by 15.7 degrees. What was the temperature at midnight?

14. Which situation does **not** result in a final value of zero?

A. The temperature after a decrease of 5°F from a temperature of -5°F.

B. Frank spent \$15.50 on supplies to setup a lemonade stand. By the end of the day he sold \$15.50 worth of lemonade. What was his profit or loss for the day?

C. The distance above sea level after increasing 24½ meters from a depth of 24½ meters below sea level.

D. The amount of money received in change after making a \$20 purchase with a \$20 bill.

15. When evaluated, will the expression  $\frac{1 - \frac{3}{4}}{\frac{2}{5} - \frac{4}{6}}$  result in a negative number or a positive number?

*It is not necessary to evaluate the expression to determine your answer.*

## Station #3 – Unit 3

Simplify every expression using the laws of exponents. Positive exponents only!

When possible, evaluate the expression.

All variables represent nonzero numbers.

1. $-7(11^0)$	2. $a^2 \times a^{-3}$	3. $3 \div 3^{-2}$	4. $(2^2)^{-3}$	5. $\frac{x^5 \cdot x^4}{x^3}$
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6. Order the following numbers from *least* to *greatest*.  $(-2)^2$ ,  $2^{-2}$ ,  $-2^2$ ,  $(-4)^0$

Write each number in standard form.

7.  $7.01 \times 10^5$       8.  $3.1 \times 10^{-4}$

Write each number in scientific notation.

9. 1,906,000      10. 0.0015

Replace the \_\_\_ with >, < or =.

11.  $5.4 \times 10^{-3}$  \_\_\_  $9.1 \times 10^{-5}$

12.  $6.04 \times 10^4$  \_\_\_  $6.04 \times 10^8$

13.  $8 \times 10^{-11}$  \_\_\_  $8.5 \times 10^{-11}$

14.  $4.01 \times 10^2$  \_\_\_  $0.401 \times 10^3$

Perform the indicated operation. Represent your final answer in scientific notation.

15.  $(2.3 \times 10^{-5})(3 \times 10^7)$

16.  $\frac{8.4 \times 10^4}{4 \times 10^{-6}}$

17. The world population is about 7 billion. There are about  $4 \times 10^7$  ants for every human on the planet. About how many ants are there in the world? Represent your final answer in scientific notation.