Unit 1 Test

Instructions:

- Please do not write on the test paper. All work should be shown in your test booklet.
- Your name must appear on the first page of the answer booklet. Please initial every page in the answer booklet that you would like to be graded.
- You must show all work / rough calculations in order to receive full credit.
- You do not need to answer the questions in order, but you must number your answers in the answer booklet so that it is clear which question you are answering.
- Please check your work carefully before submitting your test.

1. a) Give an example of an **integer** that is < -2

   b) Draw a number line.

   c) Plot -2 as a point on the number line.

   d) Plot your answer to (a) as a point on the number line.

2. a) Give an example of an **integer** that is < 2 **and** > -4

   b) Draw a number line.

   c) Plot 2 and -4 as points on the number line.

   d) Plot your answer to (a) as a point on the number line.

3. a) Define **absolute value**.

   b) If $|x| = 5$ what is/are the possible value(s) for x?

   c) Simplify $-\left|(-5)^2\right|$

   d) Simplify $|-6| \times |4|$

4. a) Write in standard form: **thirty-two billion, five million, one hundred seventy-four thousand, eight hundred eleven**.

   b) Sarah ran 5.3 miles in one direction, then turned around and ran 2.1 miles in the opposite direction. She turned around again and ran another 1.7 miles. How far away from her starting point is she now?

   c) The commutative property applies to which of the following operations: addition, subtraction, multiplication, division?

   d) When a certain number is divided by 8, the answer is 165 R3 (165 remainder 3). What is the number?

5. a) Add: 0.119 + 0.56

   b) Subtract: 0.119 - 0.56

   c) Multiply: 0.119 $\times$ 0.56

   d) Divide: 0.119 $\div$ 0.56

6. a) Add: (-180) + (-20)

   b) Subtract: (-180) - (-20)

   c) Multiply: (-180) $\times$ (-20)

   d) Divide: (-180) $\div$ (-20)

7. a) List **all the factors** of 16.

   b) List **all the factors** of 36.

   c) List **all the common factors** of 16 and 36.

   d) List **the greatest common factor** of 16 and 36.

8. a) List **the first 10 multiples** of 3.

   b) List **the first 10 multiples** of 5.

   c) List **the common multiples** of 3 and 5 **that occur in (a) and (b)**.

   d) List **the least common multiple** of 3 and 5.

9. a) What is the **prime factorization** of 24? Leave your answer in exponential notation.

   b) What is the **prime factorization** of 72? Leave your answer in exponential notation.

   c) What is the **prime factorization** of 180? Leave your answer in exponential notation.

   d) What is the **GCF** of 24, 72 and 180? Simplify your answer (do NOT leave in exponential notation).

   e) What is the **LCM** of 24, 72 and 180? Simplify your answer (do NOT leave in exponential notation).

10. a) Add. Simplify your answer (do NOT leave in exponential notation). $2^3 + 9^2 =$

b) Subtract. Simplify your answer (do NOT leave in exponential notation). $2^3 - 9^2 =$

c) Multiply. Leave your answer in exponential notation. $y^{-8} \times y^{-6} =$

d) Multiply. Leave your answer in exponential notation. $9^7 \times 8^7 =$

e) Divide. Leave your answer in exponential notation. $4^5 \div 4^{-6} =$

11. a) Simplify: $x^0 =$

b) Simplify: (-11 + 4) + (-2 +15) =

c) Simplify: $6 - 4(|8 - 11|) =$

d) Simplify: 20(-20) + 8(-2) =

e) Simplify: $4(-6)^3 - 2(-5)^2 =$

f) Simplify: $\sqrt{36}$ - 5[9 - 3(3-10)] =

g) Simplify: [73 + (-40)] + [29 + (-34)] =

h) Simplify: $\sqrt{100}$ + $\sqrt{144}$ ÷ $\sqrt{9}$ =

END OF TEST