8th Grade Chapter 1 and 2 Test

October 7, 2025

Instructions: Show all your work clearly. Work in your composition notebook. Good luck!

1. **Scientific Notation**
   (a) Write $3,400,000$ in scientific notation.
   (b) Write 0.000045 in scientific notation.
   (c) Write 2.5×10^4 in standard form.
   (d) Write 7.8×10^{-3} in standard form.
   (e) Evaluate: $(3 \times 10^2)(4 \times 10^5)$. Write your answer in scientific notation.

2. **Significant Digits**
   (a) How many significant digits are in 0.00340?
   (b) How many significant digits are in $1,200$?
   (c) How many significant digits are in 0.0500?
   (d) Round 3.4567 to 3 significant digits.
   (e) Round 0.001234 to 2 significant digits.

3. **Estimation and Irrational Numbers**
   (a) Estimate $\sqrt{50}$ to the nearest whole number.
   (b) Between which two consecutive integers does $\sqrt{75}$ lie?
   (c) Is $\sqrt{64}$ rational or irrational? Explain.

4. **Linear Equations**

   (a) Solve for x: $3x + 7 = 22$

   (b) Solve for x: $\frac{x}{3} + 2 = 8$

   (c) Solve for x: $4(x - 2) = 3x + 5$

5. **Systems of Equations - Graphical Method**

   (a) Graph the system and find the solution:

$$y = 2x + 1$$
$$y = -x + 4$$

   (b) What is the solution to the system above?

6. **Systems of Equations - Substitution Method**
   Solve using substitution:

$$x + y = 7$$
$$2x - y = 2$$

7. **Systems of Equations - Elimination Method**

   (a) Solve using elimination:

$$3x + 2y = -5$$
$$-3x - 3y = 124$$

   (b) Check your answer by substituting back into both equations.

8. **Applications of Systems** Two numbers have a sum of 125 and a difference of 17. Find the two numbers.

9. **Extra Credit** Solve the following system of equations using any method you choose:

$$2x + 3y = 55$$
$$3x - 2y = -15$$