1) (6 Points) Place each of the following numbers in the appropriate place on the number line.
   a) $\frac{5}{8}$  
   b) $\frac{13}{10}$  
   c) $-\frac{7}{5}$  
   d) $-1.007$  
   e) $\frac{15}{29}$  
   f) $2\frac{5}{12}$

2) Arrange the following numbers in order from smallest on the left to largest on the right: $\frac{1}{3}, \frac{4}{15}, \frac{17}{60}$

3) Arrange the following numbers in order from smallest on the left to largest on the right: $0.875, \frac{7}{8}, 0.8\overline{75}$

4) (2 Points) Write 0.00101 as a fraction. Don’t bother to simplify the fraction.

5) (2 Points) Find a number between 1.051 and 1.05101.
6) Simplify completely: \[7 - \left( -\frac{5}{3} \right) \div 13\]

7) Simplify completely: \[2 - 7(3|4 + 1|) - 2(-1 \cdot 4^2)\]

8) A farmer has 13.4 ounces of radish seeds to plant. He wishes to plant the seeds evenly in 4 rows. How much seed will be planted in each row?

9) A recipe for apple pie calls for \(4\frac{2}{3}\) cups of apples. How many cups of apples are needed for 9 pies?

10) An aquarium containing \(5\frac{3}{10}\) gallons of water tipped over, spilling \(2\frac{1}{2}\) gallons of water. How many gallons of water remained in the aquarium?
11) What is $\frac{3}{7}$ of $\frac{5}{6}$?

12) What percent of 40 is 26?

13) Evaluate $x^2y - x^2 + 4y$ when $x = 3$ and $y = -1$.

14) Simplify completely: $l^2 + 4lk^2 - 3k^2 - 2l^2 + k^2 + 5k^2 - 3k^2l^2$

15) Simplify completely: $-2x^2 - x - 5 - 2[-x(5 - 3x)]$
16) Multiply and simplify: \((3x^2 - 2x + 5)(2x - 3)\)

17) Solve: \(2 + 8y = 3(2y + 5) - 3\)

18) Solve: \(\frac{1}{5n} - \frac{2}{3} = 3 + \frac{1}{3}n\)

19) Solve for \(C\): \(\frac{3A}{2} = 4(B + C)\)

20) 17 is 25% of what number?
21) Solve: \(-\frac{x}{5} \leq -3\)

22) Solve and graph the solution set: \(3(x - 1) - 4(x + 1) > 0\)

23) Graph: \(y = 2x - 3\). **Label two points.**

![Graph of y = 2x - 3]

24) Given the line \(4y - 8 = x\)
   a) Find the \(y\) intercept.
   b) Find the \(x\) intercept.

25) Graph: \(y = -2\)

![Graph of y = -2]
26) Find the slope (if it exists) of the line through the given points:
   a) \((1,-2)\) and \((-1,9)\)
   b) \((-3,2)\) and \((-3,4)\)

27) Graph the line that has a \(y\) intercept \((0,4)\) and a slope of \(-3\).
   Label two points.

28) Find the slope (if it exists) of each of the following lines:
   a) \(x = -\frac{3}{2}\)
   b) \(2x + 3y = -9\)
   c) \(y = 10\)

29) The graph shows the relationship between the number of bacteria present and elapsed time.
   a) How many hours did it take for the number of bacteria to reach 3000?
   
   b) About how many bacteria were present after 2 hours?

30) David was hired to plant grass in a rectangular yard. He was told by the homeowner that the perimeter of the yard was 500 feet and its length was 60 feet more than its width. Find the area of the yard.
31) Solve the system:
\[
\begin{align*}
2x - 3y &= -12 \\
-x + 4y &= 5
\end{align*}
\]

32) Simplify completely: \((-3x^0 y^4)^2 (x y^2)\)

33) Simplify completely: \(2(a^2 - 3a + 4) - (a^2 - 4a - 3)\)

34) Perform the indicated operation and simplify completely: \((3m - n)^2\)

35) Simplify completely: \(4^{-1} \cdot 4^{-1} - 4^{-1}\)
36) Simplify completely: \( \frac{2^{-6}a}{2^{-3}a^{-4}} \)

37) Express 0.0300214 in Scientific Notation.

38) Factor completely: \( 2x^2 - 5x - 3 \)

39) Factor completely: \( 3xyz - 9x^2y^2z^2 + 27x^3y^3z^2 \)

40) Factor completely: \( 16y^2 - 9 \)
41) Solve: \(-x(x - 5) = 0\)

42) Solve: \(-10 = (x - 6)(x + 1)\)

43) Two times one number added to 5 times a second number is 49. The second number is 7 less than the first number. Find both numbers.

44) Place each of the following numbers in the appropriate place on the number line.

\[-10\ -9\ -8\ -7\ -6\ -5\ -4\ -3\ -2\ -1\ 0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\]

a) \(-\sqrt{81}\)  b) \(\sqrt{75}\)  c) \(\sqrt{0}\)  d) \(\sqrt[3]{-64}\)

45) The triangle shown is a right triangle. Find \(a\).
46) Simplify completely: \( \frac{x-1}{x^2-1} \)

47) Divide and simplify: \( \frac{x^3 + 4x^2 - 5x}{x^2 - x} \)

48) Add and simplify: \( \frac{5}{x-3} + \frac{2x}{x-5} \)

49) Multiply and simplify: \( \frac{5x - 75}{21} \cdot \frac{28}{3x - 45} \)
50) (6 points) Which of the following are not real numbers?

a) $\sqrt[3]{-1}$  

b) $-\sqrt{9}$  

d) $\sqrt{-25}$  

e) $\frac{0}{\sqrt{5}}$  

f) $-\sqrt{-16}$