Algebra I Homework: Week of Sept 17 – 21

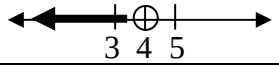
Monday, Sept 17

1. Complete the following tables:

Table 1

In Words	Inequality	Interval Notation
Numbers greater than – 5		
Numbers greater than or equal to 9		
Numbers greater than or equal to -1, but less than twenty.		

Table 2

Set Builder	Interval Notation	Graph
$\{ x \mid 4 < x \leq 14 \}$		
	$(-\infty, 5)$	
		

Tuesday, Sept 18

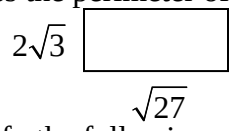
1. Complete Set Notation Packet.
2. For each of the pairs of sets, find $A \cup B$, and $A \cap B$
   a. A = {2, 3, 5, 7, 11, 13} and B = {1, 2, 3, 4, 5}
   b. A = {All counting numbers} and B = {All integers}
   c. A = {Joe, Jen, Jess, Frank, Amy, Dan} and B = {Bob, Ben, Tom, Ted, Lou}
3. Solve for x in the following equations:
   a. $3(4x - 8) = 0$ b. $\frac{3x}{4} = \frac{24}{2}$
4. Identify each of the following properties:
   a. a + b = b + a b. a(b + c) = ab + ac c. a + (-a) = 0 d. (a + b) + c = a + (b + c)
5. Write the following number in scientific notation: 13,600,000,000

Wednesday, Sept 19

1. Simplify the given radical expressions, then state whether the resulting answer is rational or irrational.
   a. $\sqrt{121}$ b. $\sqrt{20}$ c. $\sqrt{24}$ d. $\sqrt{48}$ e. $\sqrt{98}$
   f. $\sqrt{75}$ g. $-2\sqrt{12}$ h. $5\sqrt{81}$ i. $\sqrt{250}$ j. $2\sqrt{144}$
2. Write the following in interval notation:
   a. $x \leq -2$ b. $-5 < x \leq 5$ c. $x > 10$
3. A ladder 39 feet long leans against a building and reaches the ledge of a window. If the foot of the ladder is 15 feet from the foot of the building, how high is the window ledge above the ground?
4. Put 0.0000000000352 in scientific notation.
5. Evaluate the following expression: $10 - \left[12 \div 2^2 (5 - 3^2)\right]^2 \div 2$
6. Put the following numbers in order from least to greatest: $\sqrt{2}$, $\frac{\pi}{2}$, $1\frac{1}{2}$, 1.49, $\frac{7}{5}$

Thursday, Sept 20

1. Simplify each rational expression to perform the indicated operation:
   a. $\sqrt{2}+\sqrt{50}$ b. $3\sqrt{50}-5\sqrt{18}$ c. $3\sqrt{3x}-\sqrt{12x}$
2. Perform the indicated operations:
   a. $5\sqrt{3}+2\sqrt{3}+8\sqrt{3}$ b. $4\sqrt{12}+2\sqrt{3}-6\sqrt{3}$
3. Express the perimeter of the figure in simplest radical form:



4. Simplify the following rational expressions and state whether the expression is rational or irrational.
   a. $2\sqrt{48}$ b. $5\sqrt{144}$ c. $-2\sqrt{128}$
5. Evaluate both of the following:
   a. $6|12-20|\div 2$ b. $|-7|\cdot|-3|^2\cdot|3-8|$

Friday, Sept 21

1. Multiply:
   a. $\sqrt{12}\bullet\sqrt{8}$ b. $3\sqrt{27}\bullet 4\sqrt{6}$ c. $7\sqrt{15}\bullet\sqrt{10}$

   d. $\sqrt{3}\sqrt{5}\sqrt{6}$ e $(3\sqrt{6})(5\sqrt{6})$ f. $(2\sqrt{2})^2$

   g. $(3\sqrt{6})^2$ h. $\sqrt{6}(2+\sqrt{8})$ i. $\sqrt{2}(\sqrt{10}+8\sqrt{2})$
2. Simplify:
   a. $5\sqrt{48}$ b. $3\sqrt{20}$ c. $6\sqrt{45}$
3. If a triangle has one leg which measures 8 cm, and a hypotenuse that measures 14 cm, what is the remaining leg in simplest radical form?
4. Find the **area** and **perimeter** of each figure in simplest radical form.
   a.

   b.