

Algebra Homework: Week of Sept 24-28

Monday, Sept 24

1. Multiply:

a. $\sqrt{12} \cdot \sqrt{8}$

b. $3\sqrt{27} \cdot 4\sqrt{6}$

c. $7\sqrt{15} \cdot \sqrt{10}$

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. $\sqrt{6}(2\sqrt{2} + \sqrt{8})$

i. $\sqrt{2}(2\sqrt{10} + \sqrt{40})$

2. Simplify:

a. $5\sqrt{48}$

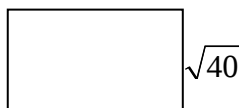
b. $3\sqrt{20}$

c. $6\sqrt{45}$

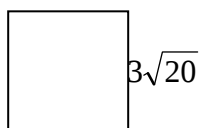
3. If a triangle has one leg which measures 8 cm, and a hypotenuse that measures 14 cm, what is the remaining leg in simplest radical form?

4. Find the **area** and **perimeter** of each figure in simplest radical form.

a. $\sqrt{90}$



b.



5. Express as a trinomial: $(3x + 2)(x + 1)$

6. Evaluate: $2^2 - 3^2 * 6 \div 2 + 6 * 1$

7. Given Set A = {Nickel, Dime, Quarter, Dollar, Half Dollar} and Set B = {Nickel, Dime, Quarter}.

a. How can we relate Set A and Set B?

b. What is the complement of B in A?

c. What is $A \cup B$

d. What is $A \cap B$

Tuesday, Sept 25

1. Divide:

a. $\frac{10\sqrt{120}}{5\sqrt{2}}$

b. $\frac{1}{2} \sqrt{\frac{36}{49}}$

c. $\frac{24\sqrt{180}}{8\sqrt{10}}$

2. Rationalize the denominator:

a. $\frac{5}{\sqrt{3}}$

b. $\frac{3}{2\sqrt{5}}$

c. $\frac{\sqrt{2}}{3\sqrt{8}}$

3. Perform the indicated operations and simplify

a. $\frac{20\sqrt{150}}{10\sqrt{3}}$

b. $(3\sqrt{2})(2\sqrt{32})$

c. $\sqrt{100} - \sqrt{64} + \sqrt{9}$

4. Perform the indicated operations and simplify:

a. $6\sqrt{13} + \sqrt{13} - 3\sqrt{13}$

b. $(2\sqrt{3} \cdot 5\sqrt{2}) - \sqrt{24}$

c. $(\sqrt{2})^2 + \frac{\sqrt{8}}{\sqrt{2}}$

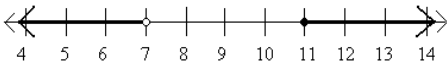
5. If Set A = $\{x \mid x \text{ is a natural number}\}$ and Set B = $\{x \mid x \text{ is a negative number}\}$

a. What is $A \cup B$

b. What is $A \cap B$

Wednesday, Sept 26

1. If one leg of a right triangle is 8 feet, and the hypotenuse of the triangle is 20 feet, what is the length of the remaining leg in simplest radical form?
2. Can 7, 9, 13 be actual measurements of the sides of a right triangle? Be sure to show mathematical proof to support your answer.
3. A fire truck's ladder needs to reach a window 20 feet above ground. The ladder is 28 feet long and the truck is 22 feet away from the building. Is the ladder long enough to reach the truck? Why or why not?
4. If the length of a rectangle is $3\sqrt{98}$ feet, and the width is $2\sqrt{128}$ feet, what is the area and perimeter of the rectangle? (Express your answers in simplest radical form if necessary)
5. The perimeter of a rectangle is $18\sqrt{2}$ and its width is $\sqrt{8}$. What is the length in simplest radical form?
6. Evaluate: $3 - [12 - 6^2 | 5 - 6 | + 2]$
7. Complete the chart:

Set Builder Notation	Inequality	Graph on a Number Line	Interval Notation
$\{x x < 2, 4 \leq x < 6\}$			
			
	$-3 < x < 1$		
			$(-\infty, -2] \cup (3, \infty)$

Thursday, Sept 27 – Study for Test Tomorrow**Friday, Sept 28** – Test Today!*Topics to Study for Exam:*

Order of Operations

Absolute Value – with order of operations

Set Notation and Writing Sets – Union, Intersection, Null Set, Complement, Interval Notation, Inequalities, Set Builder Notation, Roster Notation.

Radicals – Simplifying, Adding, Subtracting, Multiplying, Dividing, Squaring, Rationalizing