CHAPTER 7

REVIEW

Vocabulary

7.1

Square root, perfect square, radical, radicand

7.2

Cube root, perfect cube

7.3

Theorem, legs, hypotenuse, Pythagorean Theorem

7.4

Natural numbers, whole numbers, integers, rational numbers, irrational numbers, real numbers

How would you explain to a 2nd grader what a square root is?

Find the square root(s).

1) $-\sqrt{4}$

2) $\sqrt{\frac{16}{25}}$

Evaluate the expression.

3) $3\sqrt{49} + 5$

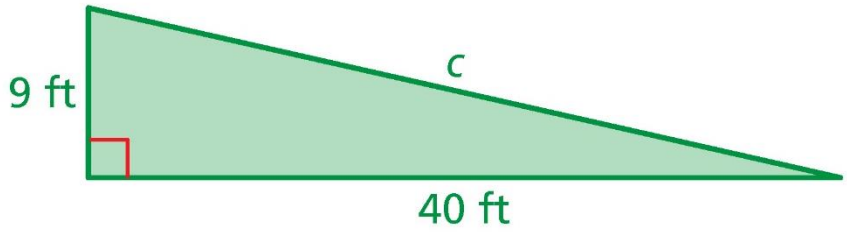
4) $10 - 4\sqrt{16}$

Evaluate the expression.

5) $\frac{1}{4} + \sqrt{\frac{100}{4}}$

Find the missing length of the triangle.

6)



Classify the real number.

7) $-\sqrt{225}$

8) $-1\frac{1}{9}$

9) $\sqrt{41}$

10) $\sqrt{17}$

Is it Rational?

Remember that a bar over digits indicates a recurring decimal number, e.g. $0.2\overline{56} = 0.2565656...$

1. For each of the numbers below, decide whether it is rational or irrational.

   Explain your reasoning in detail.

5	
$\frac{5}{7}$	
0.575	

$\sqrt{5}$	
$5+\sqrt{7}$	
$\frac{\sqrt{10}}{2}$	
$5.75....$	

2. Arlo, Hao, Eiji, Korbin, and Hank were discussing $0.\overline{57}$.

This is the script of their conversation.

Student	Statement	Agree or disagree?
Arlo:	$0.\overline{57}$ is an irrational number.	
Hao:	No, Arlo, it is rational, because $0.\overline{57}$ can be written as a fraction.	
Eiji:	Maybe Hao's correct, you know. Because $0.\overline{57} = \frac{57}{100}$.	
Korbin:	Hang on. The decimal for $0.\overline{57}$ would go on forever if you tried to write it. That's what the bar thing means, right?	
Hank:	And because it goes on forever, that *proves* $0.\overline{57}$ has *got* to be irrational.	

a. In the right hand column, write whether you agree or disagree with each student's statement.

b. If you think $0.\overline{57}$ is rational, say what fraction it is, and explain why.

If you think it is not rational, explain how you know.

Estimate the square root to the nearest (a) integer and (b) tenth.

11) $\sqrt{38}$

12) $\sqrt{115}$

Which number is greater? Explain.

13) $\sqrt{11}, 3\frac{3}{5}$