

Indicators

Objective:

1.01 Develop number sense for the real numbers.

c) Use estimates of irrational numbers in appropriate situations.

Vocabulary and Resources

radical	radicand	greater than or equal to \geq
terminating decimal	perfect square	compound inequality (ex. $a < x < b$)
repeating decimal	number line	ascending order
non-terminating	equal =	descending order
non-repeating	less than $<$	estimation
pi, π	greater than $>$	place value
square root	less than or equal to \leq	benchmark values

A. A square kite has an area of 5 square feet. To the nearest tenth of a foot, what is the length of one side of the kite?

B. During the investigation of traffic accidents, a piece of evidence that is identified and analyzed is the skid marks left by the cars involved. The formula $S = \sqrt{30df}$ is used to determine the vehicle's minimum speed, S in mph, where d = length of the skid marks in feet and f = drag factor. A recent accident at an intersection showed skid marks for the two cars involved to be lengths of 36' 7" and 42' 7". Find the minimum speed of each car if the drag factor for both vehicles was 0.83.

C. The hypotenuse of a right triangle is $\sqrt{32}$. Simplify this radical expression.

D. The hypotenuse of a right triangle measures 18 and one of the sides has a measure of 15. Give the exact measure of the missing side.

a) 99

b) 33

c) $3\sqrt{61}$

d) $3\sqrt{11}$

E. If a , b and c are real numbers, a and c are non-negative and $\sqrt{a} = b\sqrt{c}$, what must be true about a , b , and c ?

F. If a , b and c are real numbers, b is non-negative, and $a\sqrt{b} = c$, what must be true about the values for a and b if:

- $c = 0$
- $c < 0$
- $c > 0$

G. Given: a , b and c are real numbers, b is non-negative, and $a\sqrt{b} = c$. Without using a calculator, what must be true about the value of the missing variable?

a	b	c
$a = 5$		$c > 50$
$a < 3$		$c = 12$
	$b < 49$	$c = 56$
$a = 4$	$b < 81$	