

Name _____

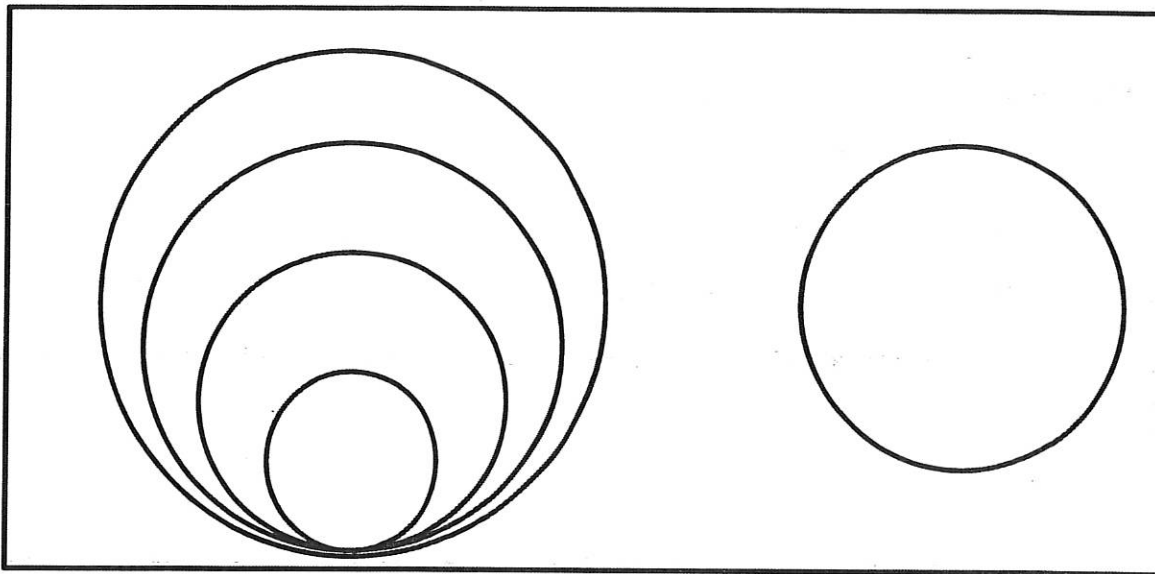
keep going!



all your hard work will pay off in the end.

Unit 6 Review – Part 1
Concepts #20 – Square/Cube Roots & Number Systems

Use the word box below to label each part of the Venn Diagram. Be sure to use all words in the word box. After you label, put 2 examples of each type of number on the Venn Diagram.



Real Numbers Irrational Numbers Natural Numbers Integers Whole Numbers

Check the box for each number set that the given number is a part of.

	Natural Numbers	Whole numbers	Integers	Rational numbers	Irrational numbers
$\sqrt{21}$					
-11.2					
-6					
$\frac{11}{4}$					
$-1.\overline{67}$					
5.27561...					
0					

1. Give an example of a rational number that is not a whole number. _____
2. Give an example of an irrational number that is a square root. _____
3. Give an example of an irrational number that is a cube root. _____
4. Give an example of a whole number that is not a natural number. _____
5. Give an example of a rational number that is not an integer. _____
6. Give an example of an integer that is not natural number. _____

7. Which of the following does not represent a rational number? (circle your answer)

- a) -25 b) $\frac{11}{39}$ c) $\sqrt{60}$ d) $12.09\overline{82}$

Explain how you know it is not a rational number.

8. Give the side length of a square with an area of 169 cm^2 . _____

9. Give the side length of a cube with a volume of 27 cm^3 . _____

10. The volume of a cube shaped box is 729 cubic centimeters. What is the measure of the length, width and height?

11. a. Explain what is meant by the *square root* of a number. b. How many square roots does 36 have?

12. a. Explain what is meant by the *cube root* of a number. b. Can you get an answer to $\sqrt{-27}$? $\sqrt[3]{-27}$?

13. Give the first 5 perfect squares. _____

14. Give the first 5 perfect cubes. _____

Evaluate the expressions. **Show all work!**

15. $\sqrt{64} + 2\sqrt{121}$ 16. $(\sqrt{16})^2 - 5$ 17. $\sqrt{\frac{81}{100}}$ 18. $\pm\sqrt{1.44}$ 19. $4\sqrt{49} - 2\sqrt{\frac{25}{4}}$

20. $15 + \sqrt[3]{125}$ 21. $2\sqrt[3]{-729} - 5$ 22. $\sqrt[3]{\frac{1}{8}} + 3\frac{3}{4}$ 23. $\sqrt[3]{\frac{27}{125}} + \left(\sqrt[3]{-\frac{2}{5}}\right)^3$

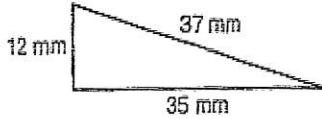
Name _____

**no
negative
thoughts
allowed**

Unit 6 Review – Part 2

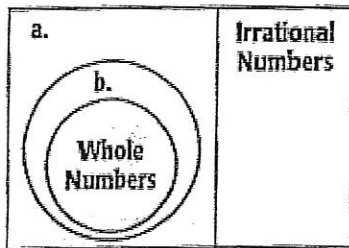
A. Concept #21 – Pythagorean Theorem

SHORT ANSWER Determine whether the following figure is a right triangle. Justify your answer.



B. Concept #20 – Square/Cube Roots & Number Systems

SHORT ANSWER The Venn diagram shows the real number system. Write the names of the missing sets of numbers.



GIVE AN EXAMPLE OF A RATIONAL NUMBER THAT IS NOT A WHOLE NUMBER.

GIVE AN EXAMPLE OF AN INTEGER THAT IS NOT A RATIONAL NUMBER.

GIVE TWO EXAMPLES OF AN IRRATIONAL NUMBER.

a. =

b. =

C. Concept #20 – Square/Cube Roots & Number Systems

Which of the following does *not* represent a rational number?

EXPLAIN why you chose your answer.

F. -250

G. $\frac{11}{39}$

H. $\sqrt{60}$

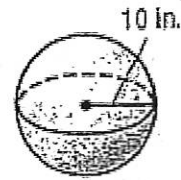
I. $12.09\overline{82}$

D. Concept #22 – Volume

Circle the letter for the correct answer. Round to the nearest tenth. Show work.

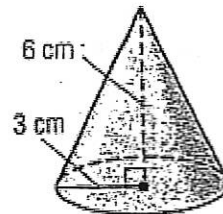
1. A. 4,188.8 in³
B. 3,141.6 in³

- C. 418.8 in³
D. 314.2 in³



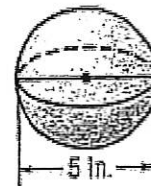
2. F. 37.7 cm³
G. 56.5 cm³

- H. 113 cm³
I. 169.9 cm³



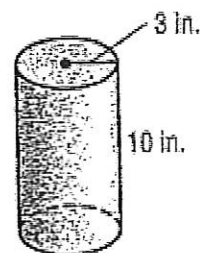
3. A. 49.1 in³
B. 65.4 in³

- C. 196.3 in³
D. 200 in³



4. F. 94.2 in³
G. 188.4 in³

- H. 282.7 in³
I. 1,130.4 in³



one small
positive
thought
in the morning can
change
YOUR
whole day.

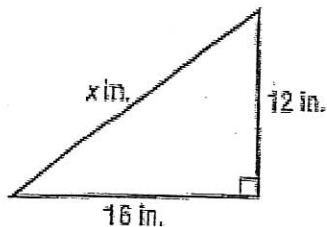
E. Concept #22 – Volume

An organic foods company is planning packaging for a new snack mix consisting of dried fruits and nuts. The president of the company has narrowed the choices to the three containers shown below. Which container should they pick and why? Provide details that support your answer.

- a.) A cylinder with a radius of 2.5 in and a height of 8 in.
- b.) A rectangular prism (box) with width 2.5 in., length 6 in., and height 8 in.
- c.) A cone with a radius of 4 in. and a height of 10 in.

F. Concept #21 – Pythagorean Theorem

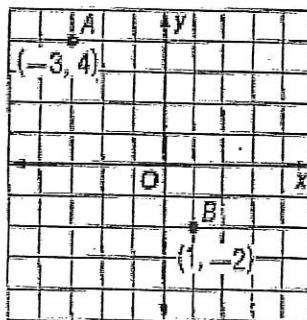
What is the perimeter of the triangle?



G. Concept #21 – Pythagorean Theorem

What is the distance between points $A(-3, 4)$ and $B(1, -2)$? Round to the nearest tenth if necessary.

- F. 6.08 units
- G. 6.1 units
- H. 6.5 units
- I. 7.2 units



H. Concept #21 – Pythagorean Theorem

Which of the following could be the side measures of a right triangle?

A. 6 ft, 5 ft, 4 ft

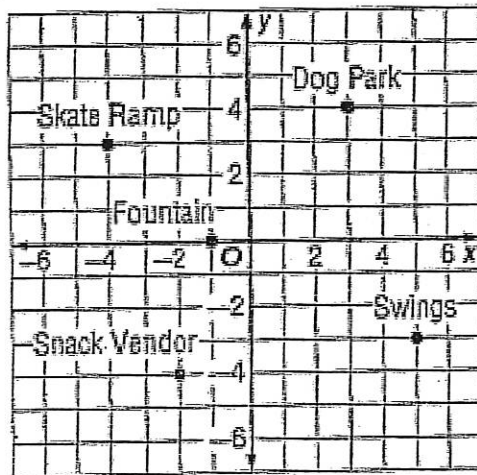
C. 10 ft, 8 ft, 6 ft

B. 8 ft, 7 ft, 6 ft

D. 12 ft, 10 ft, 8 ft

I. Concept #21 – Pythagorean Theorem

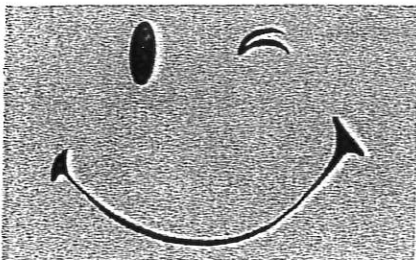
Use the park map below to answer the questions.



a. At what point is the snack vendor located? _____

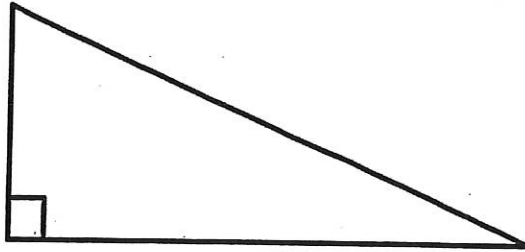
b. At what point is the dog park? _____

c. What is the distance between the dog park and the snack vendor? Round to tenth.



Unit 6 Review – Part 3

1. (a) A right triangle has a side equal to 6 cm and a side equal to 10 cm. Identify a third side length for the triangle. Label the length of each side.

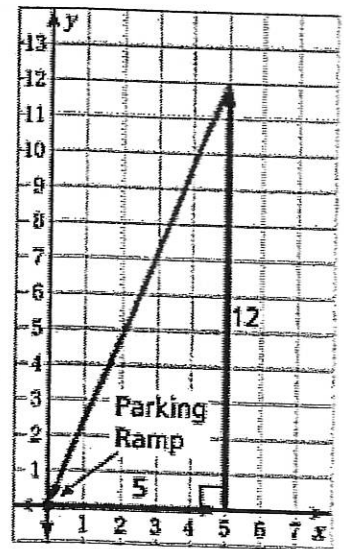


- (b) Do the following side lengths form a right triangle? Justify your answer.

5 cm, 12 cm, 14 cm

9 cm, 12 cm, 15 cm

2. A car leaves a parking ramp and travels 5 miles due east. The car makes a turn and travels 12 miles due north. The car has enough gas in the tank to travel 12.7 miles. Can the car make it back to the parking ramp using a direct route? Explain your reasoning.



3. Evaluate each expression.

a. $2(\sqrt{16})^2 + 5$

b. $\left(\sqrt[3]{-\frac{1}{8}}\right) + 3\frac{3}{4}$

c. $28 - 2\sqrt{225}$

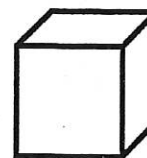
4. (a) Organize the following numbers into the table below.

4 $-\frac{1}{3}$ $-\sqrt{22}$ 0.121231234 ... π $\sqrt[3]{64}$

Rational Numbers	Irrational Numbers

(b) Give two more examples each of rational and irrational numbers. Justify your choices.

5. The volume of a cube shaped box is 729 cubic centimeters. What is the measure of the length, width and height?



6. Find the volume of the three shapes below. Start with your formula; you will need to know this for the benchmark assessment. Circle the shape with the biggest volume.

