Cornell Notes	Topic/Objective: M7 L2 Square Roots	Name:
	8.EE.A.2: Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Know that $\sqrt{2}$ is irrational. a. Evaluate square roots of perfect squares less than or equal to 225. b. Evaluate cube roots of perfect cubes less than or equal to 1000.	Class/Period:
		Date:

Learning Target: I can

Questions:	Notes:
	_____ a positive number and finding a square root are _____. You can use this relationship to evaluate expressions and solve equations involving squares.

3 — Evaluating Expressions Involving Square Roots

Evaluate each expression.

a. $5\sqrt{36} + 7 = 5\ \boxed{\ }\ + 7$ Evaluate the square root.

$= \boxed{\ } + 7$ Multiply.

$= \boxed{\ }$ Add.

b. $\dfrac{1}{4} + \sqrt{\dfrac{18}{2}} = \dfrac{1}{4} + \boxed{\ }$ Simplify.

$= \dfrac{1}{4} + \boxed{\ }$ Evaluate the square root.

$= \boxed{\ }$ Add.

c. $\left(\sqrt{81}\right)^2 - 5 = \boxed{\ } - 5$ Evaluate the power using inverse operations.

$= \boxed{\ }$ Subtract.

On Your Own

Evaluate the expression.

7. $12 - 3\sqrt{25}$

8. $\sqrt{\dfrac{28}{7}} + 2.4$

9. $15 - \left(\sqrt{4}\right)^2$

The area of a crop circle is 45,216 square feet. What is the radius of the crop circle? Use 3.14 for π.

$A = \pi r^2$ Write the formula for the area of a circle.

▭ $\approx 3.14 r^2$ Substitute 45,216 for *A* and 3.14 for π.

$14{,}400 = r^2$ ▭ each side by 3.14.

$\sqrt{14{,}400} = \sqrt{r^2}$ Take positive ▭ of each side.

$120 = r$ Simplify.

⋮• The radius of the crop circle is about 120 feet.

On Your Own

The area of a circle is 2826 square feet. Write and solve an equation to find the radius of the circle. Use 3.14 for π.

28. **NOTEPAD** The area of the base of a square notepad is 2.25 square inches. What is the length of one side of the base of the notepad?

29. **CRITICAL THINKING** There are two square roots of 25. Why is there only one answer for the radius of the button?

$A = 25\pi \text{ mm}^2$
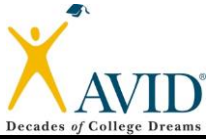
Cornell Notes

AVID
Decades *of* College Dreams

Topic/Objective: **M7 L2 Square Roots Classwork**

8.EE.A.2: Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Know that $\sqrt{2}$ is irrational.
a. Evaluate square roots of perfect squares less than or equal to 225.
b. Evaluate cube roots of perfect cubes less than or equal to 1000.

Name:

Class/Period:

Date:

Exercises

Find the positive value of x that makes each equation true. Check your solution.

1. $x^2 = 169$

   a. Explain the first step in solving this equation.

   b. Solve the equation, and check your answer.

2. A square-shaped park has an area of 324 yd^2. What are the dimensions of the park? Write and solve an equation.

3. $625 = x^2$

5. What positive value of x makes the following equation true: $x^2 = 64$? Explain.

6. What positive value of x makes the following equation true: $x^3 = 64$? Explain.

Problem Set

Find the positive value of x that makes each equation true. Check your solution.

1. What positive value of x makes the following equation true: $x^2 = 289$? Explain.

2. A square-shaped park has an area of 400 yd^2. What are the dimensions of the park? Write and solve an equation.

3. A cube has a volume of 64 in^3. What is the measure of one of its sides? Write and solve an equation.

4. What positive value of x makes the following equation true: $125 = x^3$? Explain.

5. Find the positive value of x that makes the equation true: $x^2 = 441^{-1}$.
   a. Explain the first step in solving this equation.
   b. Solve and check your solution.

6. Find the positive value of x that makes the equation true: $x^3 = 125^{-1}$.

7. The area of a square is 196 in^2. What is the length of one side of the square? Write and solve an equation, and then check your solution.

8. The volume of a cube is 729 cm^3. What is the length of one side of the cube? Write and solve an equation, and then check your solution.

9. What positive value of x would make the following equation true: $19 + x^2 = 68$?

Exit Ticket

Find the positive value of x that makes each equation true. Check your solution.

1. $x^2 = 225$

   a.   Explain the first step in solving this equation.

   b.   Solve and check your solution.

2. $x^3 = 64$

3. $x^2 = 361^{-1}$

4. $x^3 = 1000^{-1}$