

Activator

Can you take the (square root) of a negative number? No

Why? Two of the same numbers cannot multiply to be negative

Multiplying Integers Rules

$$\textcircled{+} \times \textcircled{+} = \textcircled{+}$$

$$\textcircled{-} \times \textcircled{-} = \textcircled{+}$$

Calculate $\sqrt{-9}$

Page #21
Lesson 7.6

$$(3)(3) = +9$$

$$(-3)(-3) = +9$$

Error: Why? non-real (**irrational**) number

Today's Objective

Unit 7

Lesson 6

Students will be able to solve equations with exponents using (square) roots.

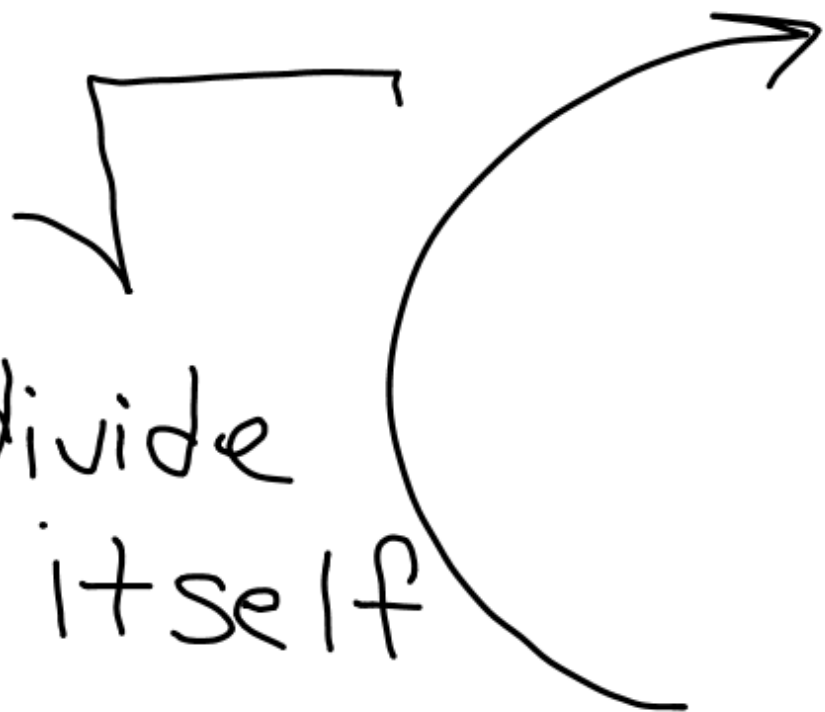




Give me any
number.

Radical

Exponent



divide
itself

$(\quad)^2$

times itself

Lesson

7.6

Today's New Vocab (1 of 4)

How do you solve radical equations?

Solve. $x^2 = 36$

$$\sqrt{\quad} = \sqrt{\quad}$$
$$x = 6$$

Can you
check your
work? YES



$$x^2 = 36$$
$$(6)^2 = 36$$
$$36 = 36$$

What is the opposite of
an exponent? **A root.**

Yes, $x = 6$
is a solution.

Today's New Vocab (2 of 4)

But, is $x = 6$ the only solution? No

$$x^2 = 36$$

Make a table for

$$f(x) = x^2 - 36$$

$$(-6)^2 = 36$$

$$36 = 36$$

$x = -6$ is

also a solution.

x	$f(x)$
-6	0
6	0

Today's New Vocab (3 of 4)

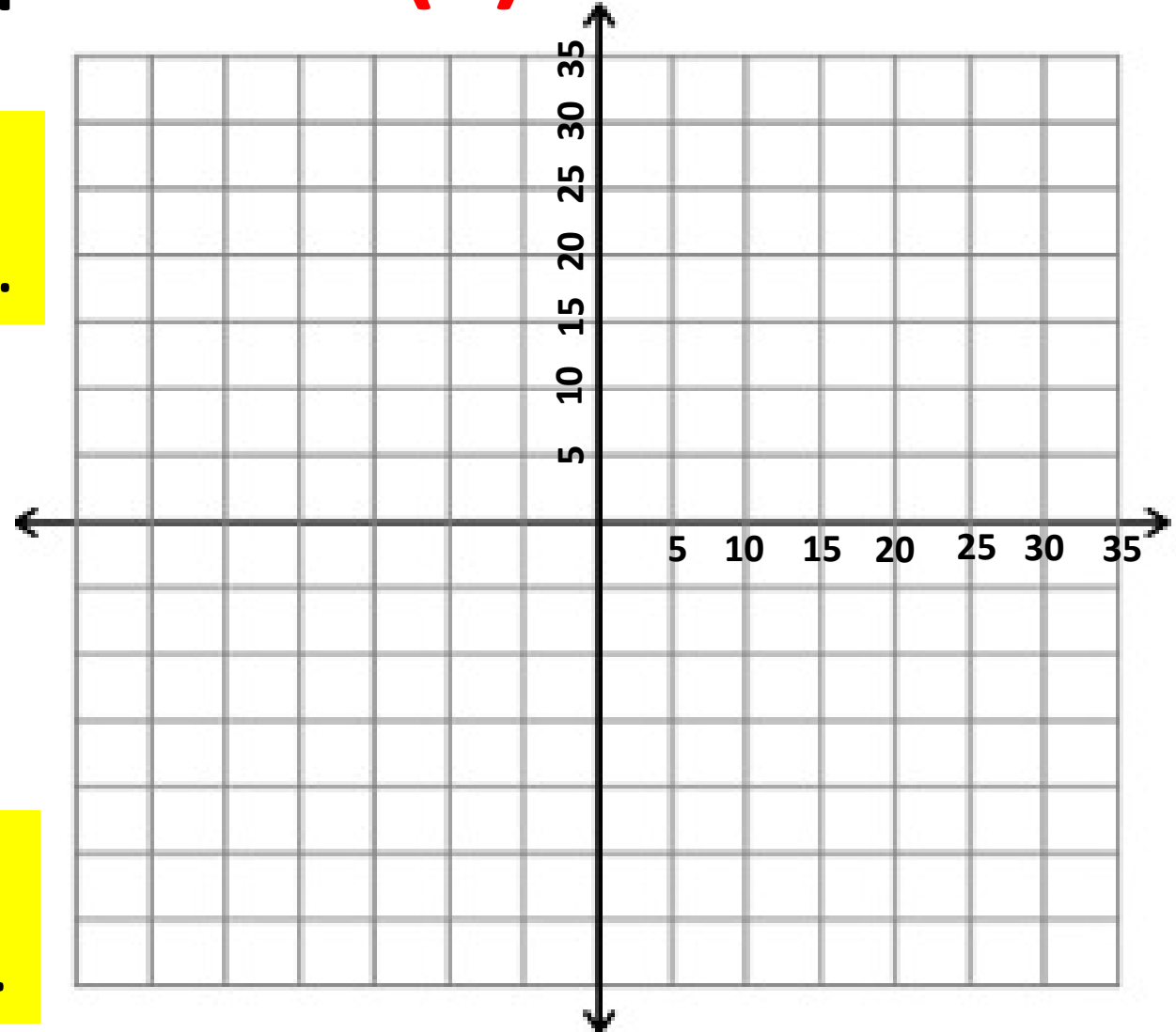
Graph the quadratic equation $f(x) = x^2 - 36$.

x	H(x)
-6	0
-4	-20
-1	-35
1	-35
4	-20
6	0

← Box this Zero on the graph.

Page #21
Lesson 7.6

← Box this Zero on the graph.



Today's New Vocab (4 of 4)

Solve and graph the quadratic equation.

$$4x^2 - 3 = 97$$

$$+3 \quad +3$$

$$4x^2 = 100$$

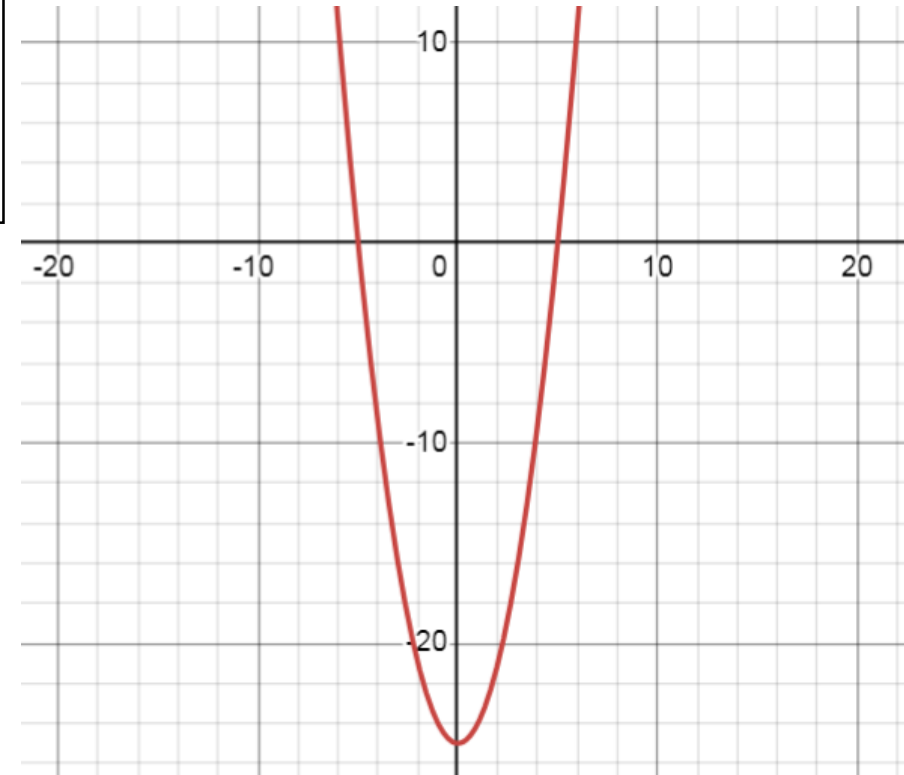
$$\div 4 \quad \div 4$$

$$x^2 = 25$$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$x = \pm 5$$

Page #21
Lesson 7.6



x	y
5	0
-5	0

Remove the
exponent **last.**

PSADME

Group Work Questions

Pages 23-24
Lesson 7.6

Directions: All groups, please do all of the questions. Use your notes to help you. [Ask 2 people before you ask me.]

Stop at 9:26 or 10:56 or 12:50 or 2:15

Do a few questions on the study guide if you finish early.

*One person from each group will present one question.

Work Period

Evaluate $g(4)$ when $g(x) = 3 - \sqrt{x + 5}$.

Is $g(4)$ rational? Yes

b/c $\sqrt{9}$ is perfect.

$$g(4) = 3 - \sqrt{(4) + 5}$$

$$g(4) = 3 - \sqrt{9}$$

$$g(4) = 3 - 3$$

$$g(4) = 0$$

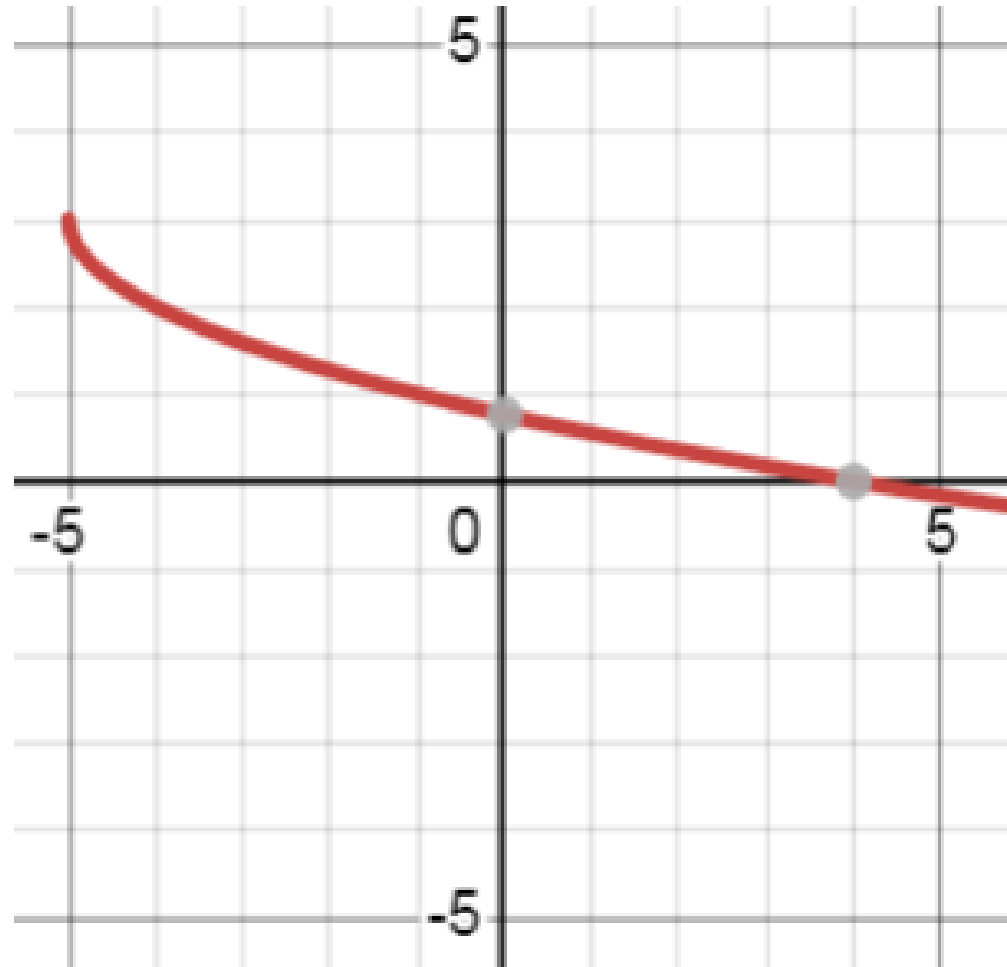
x	$g(x)$
4	0

Exit Ticket

Graph $g(x) = 3 - \sqrt{x + 5}$.

Is $(4, 0)$
a root?

Yes, it is on
the x-axis.



x	$g(x)$
-5	3
-4	2
-1	1
4	0