12.3 Solve Quadratics using Square Roots

NOTES

ALGEBRA

Write your questions here!

Solve. Express your answer in decimal form.

$x^2 = 25$

$2x^2 - 5 = 10$

Solve. Express your answer in simplest radical form.

$77 = 2x^2 - 3$

$4x^2 - 5 = 11$

Solve.

$x^2 + 8 = 3$

SUMMARY:

Now, summarize your notes here!

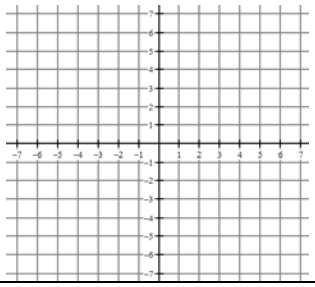
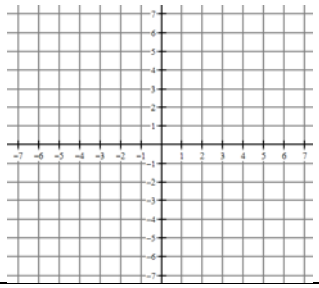
PRACTICE

Solve. Express your answer in decimal form. Round to the nearest hundredth.		
1. $3x^2 - 12 = 0$	2. $4x^2 - 60 = 0$	3. $\frac{d^2}{3} = 15$
4. $10 - 4g^2 = -11$	5. $7q^2 + 35 = 14$	6. $3z^2 - 18 = -18$
Solve. Express your answer in simplest radical form.		
7. $\frac{x^2}{2} + 6 = 13$	8. $14 - 2x^2 = 20$	9. $14 - k^2 = 2$
10. $53 = 8 + 9m^2$	11. $3c^2 = 120$	12. $4b^2 - 5 = 67$

Multiple Choice

13. Which of the following is a solution of the equation $61 - n^2 = -14$?

A. 75 B. -5 C. $3\sqrt{5}$ D. $-5\sqrt{3}$ E. 37.5

SKILLZ REVIEW		
GRAPH	**FACTOR**	**RADICALS**
1. $3x + 2y = -6$ 	2. $x^2 - 49$	3. Simplify $\sqrt{32}$
4. $x = -2$ 	5. $6x^2 + 19x - 7$	6. Simplify $\frac{3}{\sqrt{2}}$

12.3 Solve Quadratics using Square Roots

APPLICATION

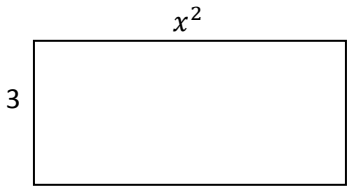
1. Solve. Express your answer in decimal form.

$$3x^2 - 5 = 46$$

2. Solve. Express your answer in simplest radical form.

$$37 - y^2 = -8$$

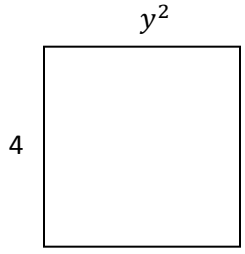
3. The rectangle has a **PERIMETER** of 120 inches.



a. Write an equation to represent this.

b. Solve for *x*.

4. The rectangle has an **AREA** of 56 in^2.



a. Write an equation to represent this.

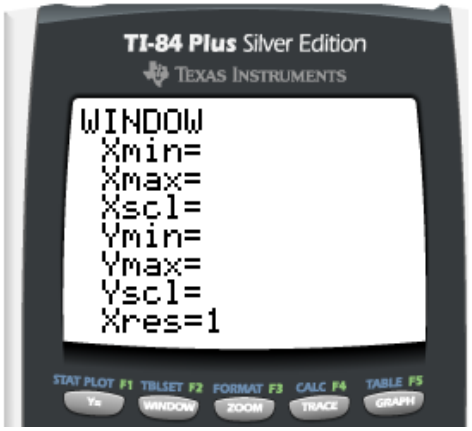
b. Solve for *y*.

5. A ball is dropped from the top of a 1096-foot building. The distance s (in feet) of the ball from the ground after t seconds is given by the formula: $s(t) = -16t^2 + 1096$

a. Graph in a "friendly window" so that you can see the ball hit the ground. Record here.

b. Fill in the table.

t	$s(t)$
0	
5	
8	
	520
	900



c. What does $s(3.2)$ mean? Find it!

d. When does the ball hit the ground?

6. The Free Fall Tower at Holiday Park is a ride that carries you up 250 feet above the ground then drops you. If the brakes on this ride failed, when would crash into the ground?

$$s(t) = -16t^2 + vt + h$$

$s(t)$ = height of object

v = initial velocity

h = initial height of object

7. Solve. Express in simplest radical form.

a. $(x+3)^2 = 49$

b. $(x-3)^2 + 1 = 28$