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INSTRUCTOR

Steve Waters

Warner Pacific College, OR

WebAssign: §1.3b–1.4 (Homework)

Current Score

QUESTION

1

2

3

4

5

6

7

8

9

10

11

12

13

14

POINTS

-2

-1

-1

-1

-1

-2

-1

-1

-4

-1

-1

-1

-2

-1

TOTAL SCORE

-20

0.0%

Due Date

FRI, SEP 18, 2020

11:30 AM PDT

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Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

Assignment Scoring

Your last submission is used for your score.

1. [-/2 Points]

DETAILS

LARCAABLS2 1.3.066.

MY NOTES

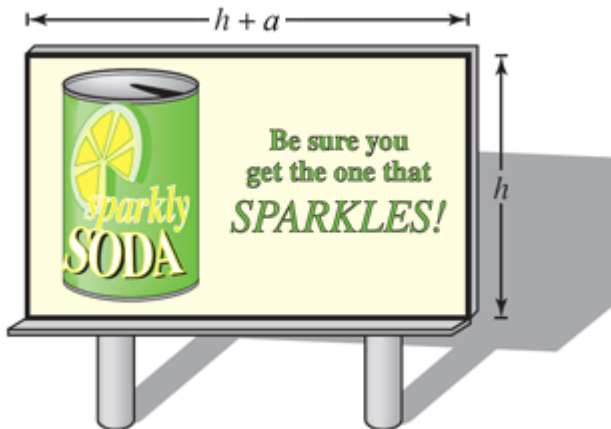
ASK YOUR TEACHER

PRACTICE ANOTHER

A billboard is $a = 10$ feet longer than it is high (see figure). The billboard has 600 square feet of advertising space. What are the dimensions of the billboard?

length ft

height ft



2. [-/1 Points]

DETAILS

LARCAABLS2 1.3.070.

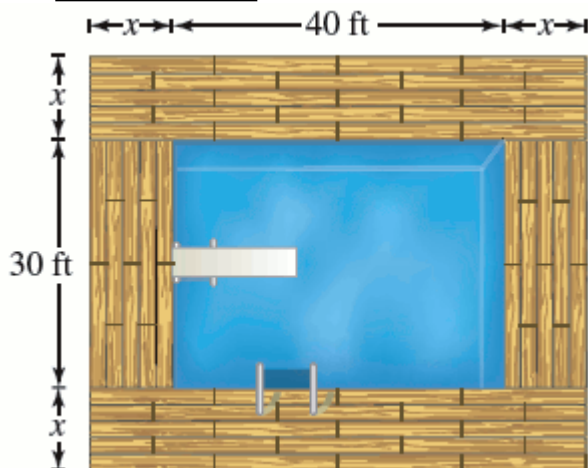
MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

A rectangular pool is 30 feet wide and 40 feet long. It is surrounded on all four sides by a wooden deck that is x feet wide. The total area enclosed within the perimeter of the deck is 3696 square feet. What is the width of the deck?

$x =$ ft



3. [-/1 Points]

DETAILS

LARCAABLS2 1.3.072.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Assume that air resistance is negligible, which implies that the position equation $s = -16t^2 + v_0t + s_0$ is a reasonable model.

A bridge near a city is one of the highest suspension bridges in the world. The bridge is 1088 feet above a river. A rock is dropped from the bridge. How long does it take the rock to hit the water? (Round your answer to two decimal places.)

$t =$ s

4. [-/1 Points]

DETAILS

LARCAABLS2 1.3.078.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

An equilateral triangle has a height of 8 feet. How long are each of its legs? (Hint: Use the height of the triangle to partition the triangle into two right triangles of the same size. Round your answer to two decimal places.)

 ft

5. [-/1 Points]

DETAILS

LARCAABLS2 1.3.084.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The demand equation for a product is $p = 45 - 0.0005x$, where p is the price per unit and x is the number of units sold. The total revenue R from selling x units is given by

$$R = xp = x(45 - 0.0005x).$$

How many units must be sold to produce a revenue of \$1,012,500?

$x =$ units

6. [-/2 Points]

DETAILS

LARCAABLS2 1.3.086.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The blue oak tree, native to California, is known for its slow rate of growth. Fencing enclosures protect seedlings from herbivore damage and promote faster growth. The height H (in inches) of an enclosed blue oak tree is expected to change according to the model

$$H = 0.74t^2 + 25, \quad 0 \leq t \leq 5$$

where t represents the year, with $t = 0$ corresponding to 2010. Approximate the height of the tree in 2013. (Round your answer to two decimal places.)

 in

Then, use the model to approximate the year in which the height of the tree will be about 38 inches. (Round your answer to the nearest year.)

7. [-/1 Points]

DETAILS

LARCAABLS2 1.3.089.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

A company determines that the average monthly cost C (in dollars) for staffing temporary positions can be modeled by

$$C = 137.45t^2 + 13,604, \quad t \geq 0$$

where t represents the year, with $t = 0$ corresponding to 2000. Use the model to predict the year in which the average monthly cost will be about \$45,000. (Round your answer to the nearest year.)

8. [-/1 Points]

DETAILS

LARCAABLS2 1.4.012.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use the Quadratic Formula to solve the quadratic equation. (Enter your answers as a comma-separated list.)

$$25x^2 - 15x + 2 = 0$$

 $x =$

9. [-/4 Points]

DETAILS

LARCAABLS2 1.4.013.SBS.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use the Quadratic Formula to solve the quadratic equation.

$$6x = 5 - x^2$$

STEP 1: Rewrite the equation.

$$x^2 + \boxed{6}x - \boxed{5} = 0$$

STEP 2: Apply the quadratic formula.

$$x = \frac{-6 \pm \sqrt{\boxed{36} - 4(\boxed{-5})}}{2 \boxed{1}}$$

STEP 3: Simplify.

$$x = \frac{\boxed{-6} \pm \boxed{2\sqrt{14}}}{2}$$

$$x = \boxed{-3} \pm \boxed{\sqrt{14}}$$

STEP 4: Separate the answers. (Enter your answers as a comma-separated list.)

$$x = \boxed{-6.74, 0.74}$$

10. [-/1 Points]

DETAILS

LARCAABLS2 1.4.015.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use the Quadratic Formula to solve the quadratic equation. (Enter your answers as a comma-separated list.)

$$x^2 - 6x + 3 = 0$$

 $x =$

0.55, 5.45

11. [-/1 Points]

DETAILS

LARCAABLS2 1.4.020.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use the Quadratic Formula to solve the quadratic equation. (Enter your answers as a comma-separated list.)

$$4x^2 + 3 = 12x$$

 $x =$

0.28, 2.72

12. [-/1 Points]

DETAILS

LARCAABLS2 1.4.036.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use a calculator to solve the quadratic equation. (Round your answers to three decimal places. Enter your answers as a comma-separated list.)

$$-0.005x^2 + 0.105x - 0.191 = 0$$

 $x =$

2.012, 18.988

13. [-/2 Points]

DETAILS

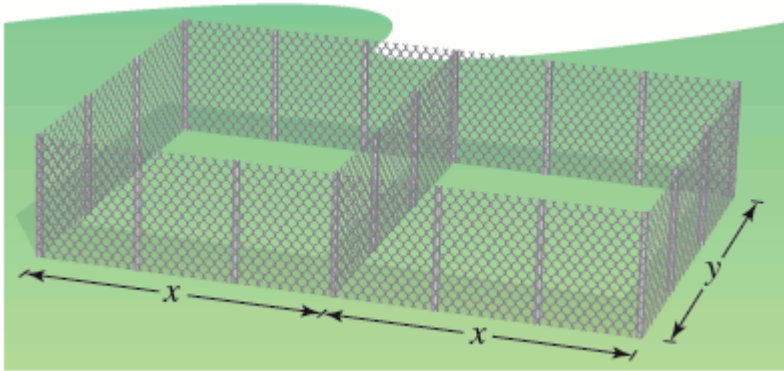
LARCAABLS2 1.4.056.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

A child care center has 200 feet of fencing to enclose two adjacent rectangular safe play areas (see figure).



(a) Write an expression for the total area A of the play areas in terms of x .

$A =$

(b) Find the dimensions for which the enclosed area is 1600 square feet. (Enter your answers as a comma-separated list.)

$(x, y) =$ (smaller x -value)
 ft

$(x, y) =$ (larger x -value)
 ft

14. [-/1 Points]

DETAILS

LARCAABLS2 1.4.074.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The demand equation for a product is

$$p = 65 - 0.0005x$$

where p is the price per unit and x is the number of units sold. The total revenue R for selling x units is given by

$$R = xp.$$

How many units must be sold to produce a revenue of \$230,000? (Enter your answers as a comma-separated list. Round your answers to the nearest whole number.)

 $x =$

units

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