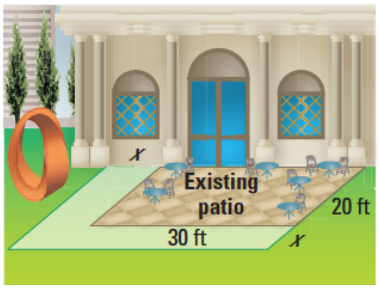
Regular Advanced Algebra with Trig, Glawe Name:_____ P: _____
Quadratics Word Problem Practice

1) A museum has a café with a rectangular patio. The museum wants to add 464 square feet to the area of the patio by expanding the existing patio as shown.



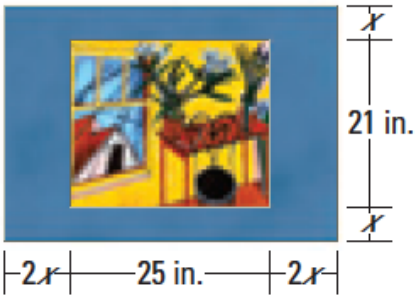
a) Find the area of the existing patio.

b) Write an equation that you can use to find the value of *x*.

c) Solve your equation. By what distance *x* should the length and the width of the patio be expanded?

2) A rectangle deck for a recreation center is 21 feet long by 20 feet wide. Its area is to be halved by subtracting the same distance *x* from the length and the width. Write and solve an equation to find the value of *x*. What are the deck's new dimensions?

3) You place a mat around a 25 inch by 21 inch painting as shown. The mat is twice as wide as the left and right of the painting as it is at the top and bottom of the painting. The area of the mat is 714 square inches. How wide is the mat at the left and right of the painting? At the top and bottom of the painting?



4) Joe is playing volleyball with his team members. The volleyball is hit up into the air by the setter, and it trajectory can be mapped by the equation $y = -2x^2 + 20x - 32$, where x and y are measured in feet.

a) How far is the volleyball thrown? Explain/show work

b) How high does the volleyball go? Explain/show work.

5) During a game of golf, Tiger Woods hits his ball out of a sand trap. The height of the golf ball is modeled by the equation $y = -4(x - 0)(x - 6)$, where x and y are measured in feet.

a) How far does the golf ball go? Explain/show work

b) How high goes the golf ball go? Explain/show work

c) How far is the golf ball once it reaches its maximum height? Explain/show work