Daily Lesson Plan **Advanced Math** **Krista Johnson**

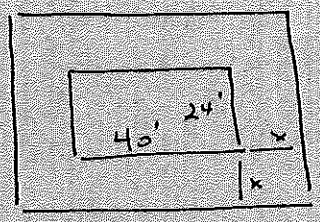
Section/Lesson Title: Quadratic Applications

Materials: WS

HW# 3.9 WS

Reflections:

(1) John & Kathy want to put a cement walk of uniform width around a rectangular garden that is 24 x 40 ft. They have enough cement to cover 660 ft². How wide should the walk be to use all the cement?



(big rectangle) − (small rectangle) = (walk)

$(2x+24)(2x+40) - 40 \cdot 24 = 660$

$4x^2 + 128x + 960 - 960 = 660$

$4x^2 + 128x - 660 = 0$

$x^2 + 32x + 256 = 660 + 256$

$(x+16)^2 = 421$

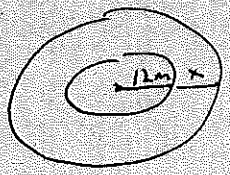
$x = -16 \pm 20.52$

$= 4.52$ or -36.52

4.52 ft

Wide!

(2) A concrete walk is to be built around a circular pool. You have 52π sq meters of concrete. How wide is the walk?



(big circle) − (small circle) = (walk)

$(x+12)^2\pi - 12^2\pi = 52\pi$

$(x+12)^2 - 144\pi = 52\pi$

$x^2 + 24x + 144 - 144 = 52$

$x^2 + 24x - 52 = 0$

$(x+26)(x-2) = 0$

$x = -26$ or $x = 2$

2m