

Name: KEY

Read all directions and problems carefully! Show all appropriate work for credit.

1. Solve the following quadratic equations.

$2y(y-8)(2y+3)=0$ [Hint: Zero Product Prop.]

$\frac{2y}{2} = 0$
 $y = 0$ (boxed)
 or
 $y - 8 = 0$
 $+8 +8$
 $y = 8$ (boxed)
 or
 $2y + 3 = 0$
 $-3 -3$
 $\frac{2y}{2} = -\frac{3}{2}$
 $y = -\frac{3}{2}$ (boxed)

$2a^2 = -3a + 2$
 $+3a - 2 +3a - 2$
 $2a^2 + 3a - 2 = 0$
 $2a^2 - 1a + 4a - 2 = 0$
 $a(2a-1) + 2(2a-1) = 0$
 $(2a-1)(a+2) = 0$
 $2a-1=0$ or $a+2=0$
 $a = \frac{1}{2}$ or $a = -2$ (boxed)

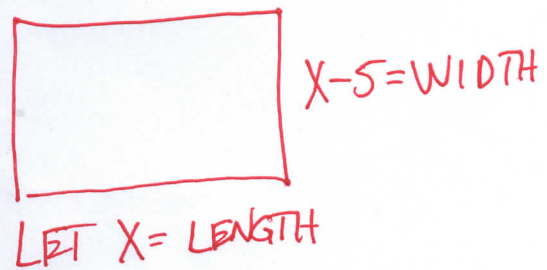
$x(x+4) = 45$
 $x^2 + 4x = 45$
 $x^2 + 4x - 45 = 0$
 $(x+9)(x-5) = 0$
 $x+9=0$ or $x-5=0$
 $x = -9$ or $x = 5$ (boxed)

SET UP the equations for the following word problems, and SOLVE ONE of the TWO.

3. The product of two consecutive integers is 110. Find the integers.

LET $X =$ THE FIRST INTEGER
 $X + 1 =$ THE NEXT CONSECUTIVE INTEGER
 $X(X+1) = 110$ (boxed)
 $X^2 + X = 110$
 $X^2 + X - 110 = 0$
 $(X+11)(X-10) = 0$
 $X+11=0$ or $X-10=0$
 $X = -11$ or $X = 10$ (boxed)

4. The width of a rectangular garden is 5 feet less than the length. Find the dimensions of the garden if the total area is 24 square feet. [Area = length \times width]



$24 = X(X-5)$ (boxed)
 $24 = X^2 - 5X$
 $0 = X^2 - 5X - 24$
 $0 = (X-8)(X+3)$
 $X-8=0$ or $X+3=0$
 $X = 8$ FT or $X = -3$ (crossed out)
 $X-5 = 3$ FT (boxed)

(+3) For SOLVING + LABELING.

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