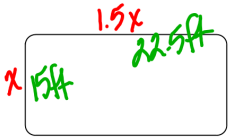
29. p R89



$P = 2l + 2w$ $P = 2(l+w)$

$P = 2(1.5x) + 2x$

$P = 3x + 2x$

$P = 5x$

$\frac{75}{5} = \frac{5x}{5}$

$15 = x$

31. $x - .15x = 1200$

$\frac{.85x}{.85} = \frac{1200}{.85}$

$x = \$1411.70$

33. 4. $\frac{87+92+84+x}{4} = 90$ ·4

$263 + x > 360$

$-263 \quad -263$

$x > 97$

49. $d = rt$

$\frac{3.84 \times 10^8}{3.0 \times 10^8} = \frac{3.0 \times 10^8 t}{3.0 \times 10^8}$

$1.28 = t$

sec

R2.3 Quadratic Equations

$$ax^2 + bx + c = 0$$

Set = 0
Factor
Solve

$$x^2 - 3x - 10 = 0$$

$$(x+2)(x-5) = 0$$

$3 \cdot 0 = 0$
$4 \cdot 0 = 0$
$0 \cdot 6 = 0$
$0 \cdot 7 = 0$

$x + 2 = 0 \quad x - 5 = 0$

$x = -2 \quad x = 5$

✓ $4 + 6 - 10 = 0 \quad 25 - 15 - 10 = 0$

$$-x^2 + 8x = 12$$

$$-x^2 + 8x - 12 = 0$$

$$x^2 - 8x + 12 = 0$$

$1 \cdot 12$
$2 \cdot 6$
$3 \cdot 4$

$$(x-2)(x-6) = 0$$

Product Property of Zero
If $ab = 0$ then $a = 0$ or $b = 0$

$x - 2 = 0 \quad x - 6 = 0$

$x = 2 \quad x = 6$

$x^2 = 16$

$x^2 - 16 = 0$

$(x+4)(x-4) = 0$

$x+4=0 \quad x-4=0$

$x = -4 \text{ or } x = 4$

$x = \pm 4$

$x^2 = 16$

$\sqrt{x^2} = \sqrt{16}$

$x = \pm 4$

$(x+5)^2 = 20$

$(x+5)(x+5) = 20$

$x^2 + 10x + 25 = 20$ (−20)

$x^2 + 10x + 5 = 0$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$a=1$, $b=10$, $c=5$

$x = \frac{-10 \pm \sqrt{(10)^2 - 4(1)(5)}}{2(1)}$

$x = \frac{-10 \pm \sqrt{100-20}}{2}$

$x = \frac{-10 \pm \sqrt{80}}{2}$

1·80
2·40
4·20
5(16)

$x = \frac{-10 \pm \sqrt{16 \cdot 5}}{2}$

$x = \frac{-10 \pm 4\sqrt{5}}{2}$

$x = -5 \pm 2\sqrt{5}$

$\sqrt{(x+5)^2} = \sqrt{20}$

$x+5 = \pm\sqrt{4 \cdot 5}$

$x+5 = \pm 2\sqrt{5}$ (−5)

$x = -5 \pm 2\sqrt{5}$

$-26x \quad -26x$

$26x = 8x^2 + 15$

1.15
3.5

$8x^2 - 26x + 15 = 0$

$(4x - 3)(2x - 5) = 0$

$+3 \quad +3 \qquad +5 \quad +5$

$4x - 3 = 0 \qquad 2x - 5 = 0$

$4x = 3 \qquad 2x = 5$

$\frac{4}{4} \quad \frac{4}{4} \qquad \frac{2}{2} \quad \frac{2}{2}$

$x = \frac{3}{4} \qquad x = \frac{5}{2}$

$3x(2x + 1) = 0$

$2x^2 - 5x - 3 = 0$

$(2x + 1)(x - 3) = 0$