

Solving Quadratic Equations- by factoring

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11:15 AM

- "solving" quadratic equations $\rightarrow$ used to find the x-intercepts
zeroes
roots

- we can solve by

- ① Graphing
- ② Factoring
- ③ Using Square Root Principle
- ④ Quadratic Formula

Ideally using the most efficient method

WB p257 $a \cdot b = 0$ is true if $a = 0$ or $b = 0$

$$(x-3)(x+1) = 0 \text{ is true if } \begin{array}{l} x-3=0 \\ x=3 \end{array} \text{ or } \begin{array}{l} x+1=0 \\ x=-1 \end{array}$$

$$x(x+1) = 0 \text{ is true if } \begin{array}{l} x=0 \\ \text{or} \\ x+1=0 \\ x=-1 \end{array}$$

Solve for x

a) $\frac{8x}{8} = \frac{0}{8}$ $x = 0$	b) $8(x+2)(x-7) = 0$ $(x+2)(x-7) = 0$ $x+2=0 \text{ or } x-7=0$ $x=-2 \quad \quad \quad x=7$	c) $x(x+2)(x-7) = 0$ $x = 0, -2, 7$	d) $(2x+1)(3x-2) = 0$ $2x+1=0 \text{ or } 3x-2=0$ $2x=-1 \quad \quad 3x=2$ $x=-\frac{1}{2} \text{ or } x=\frac{2}{3}$
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Ex #2 Solve.

a) $x^2 - 81 = 0$
 $(x+9)(x-9) = 0$
 $x = -9 \text{ or } 9$
 $x = \pm 9$

b) $4x^2 - 9 = 0$
 $(2x+3)(2x-3) = 0$
 $x = \frac{3}{2}, -\frac{3}{2}$

c) $10x^2 - 90x = 0$
 $10x(x-9) = 0$
 $x = 0, 9$

Ex #3 Solve

b) $5x^2 + 30x = -25$

$$5x^2 + 30x + 25 = 0$$

$$5(x^2 + 6x + 5) = 0$$

$$5(x+5)(x+1) = 0$$

$$x = -5, -1$$

* set the equation to zero

Ex #4

$$A = 300 \text{ cm}^2$$



w = width

w+5 = length

$$w(w+5) = 300$$

$$w^2 + 5w = 300$$

$$w^2 + 5w - 300 = 0$$

$$(w+20)(w-15) = 0$$

$$w = -20 \text{ or } w = 15$$

reject -20 since
it must be a positive

so width is 15 cm
length is $15+5=20$ cm

$$P = (15+20)2$$

$$P = 70 \text{ cm}$$

HW: WB p 260-263 # 3, 4, 6, 7, 9