



## 8.5 Equations Involving Radicals

- Need To Know

- The idea of solving radical equations
- The Principle of Squaring



## Idea for Solving Radical Equations

- Recall that square roots undo squares.
- Then how do you undo a square root?

The goal of solving equations requires us

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## Solving Radical Equations

- Solve:

$$\sqrt{x+2} = 5$$



## Idea for Solving Radical Equations

- We know from exponents that
  - If  $a = b$ ,
  - Then  $a^2 = b^2$
- Consider the equation
- |         |              |
|---------|--------------|
| $x = 5$ | original eq. |
|         | square both  |
|         | new eq.      |

### Square Property of Equality

- but ...
- We can square both sides of an equation, **but ... we must check all solutions in the original equation.**



## Solving Radical Equations

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■ Solve:

$$\sqrt{3x+1} = -4$$



## Solving Radical Equations

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■ Solve:

$$\sqrt{2a-3} + 4 = 9$$



## Solving Radical Equations

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- Solve:

$$\sqrt{7-3x} = \sqrt{12+x}$$

end