

10.4H Practice E

Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each equation by taking square roots. DO CALCULATOR CHECKS!

$$1) -4x^2 + 6 = -58$$

$$\begin{array}{r} -6 \quad -6 \\ \hline -4x^2 = -64 \\ -4 \quad -4 \end{array}$$

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

$$x = \pm 4$$

$$C: -58 = -58 \checkmark$$

$$2) -4x^2 - 8 = -108$$

$$\begin{array}{r} +8 \quad +8 \\ \hline -4x^2 = -100 \\ -4 \quad -4 \end{array}$$

$$\sqrt{x^2} = \sqrt{25}$$

$$x = \pm 5$$

$$C: -108 = -108 \checkmark$$

$$3) 4x^2 + 7 = -42$$

$$\begin{array}{r} -7 \quad -7 \\ \hline 4x^2 = -49 \\ 4 \quad 4 \end{array}$$

$$\sqrt{x^2} = \sqrt{\frac{-49}{4}}$$

$$x = \text{NO SOLUTION}$$

cannot take  
of a neg #!

$$4) 4x^2 - 16 = -16$$

$$\begin{array}{r} +16 \quad +16 \\ \hline 4x^2 = 0 \\ 4 \quad 4 \end{array}$$

$$\sqrt{x^2} = \sqrt{0}$$

$$x = 0$$

$$C: -16 = -16 \checkmark$$

$$5) 6x^2 + 9 = 3$$

$$\begin{array}{r} -9 \quad -9 \\ \hline 6x^2 = -6 \\ 6 \quad 6 \end{array}$$

$$\sqrt{x^2} = \sqrt{-1}$$

$$x = \text{NO SOLUTION}$$

$$6) 25x^2 - 100 = 0$$

$$\begin{array}{r} +100 \quad +100 \\ \hline 25x^2 = 100 \\ 25 \quad 25 \end{array}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$C: 0 = 0 \checkmark$$

STEPS

- ① isolate  $x^2$
- ② Take  $\sqrt{\quad}$  both sides
- ③ Remember there are 2 solutions
- ④ Use calc to check in orig EQ!

Solve each BINOMIAL SQUARE equation by taking square roots. DO CALC. CHECKS!

STEPS

① Isolate binomial

② Take SQ ROOT both sides

Then solve + use calc to check in orig EQ

7)  $(x+10)^2 = 0$

$x+10=0$

$x = -10$

C:  $0=0 \checkmark$

8)  $(x-35)^2 = -100$

$x = \text{NO SOLUTION}$

9)  $(x+10)^2 = 100$

$x+10 = \pm 10$

$x = -10 \pm 10$

$x = -10 + 10$

$x = 0$

C:  $100=100 \checkmark$

$x = -10 - 10$

$x = -20$

C:  $100=100 \checkmark$

10)  $(2x-5)^2 = 81$

$2x-5 = \pm 9$

$2x = \frac{5 \pm 9}{2}$

$x = \frac{5+9}{2}$

$x = 7$

$x = \frac{5-9}{2}$

$x = -2$

C:  $81=81 \checkmark$

C:  $81=81 \checkmark$

11)  $-4(2x+1)^2 = -100$

$(2x+1)^2 = 25$

$2x+1 = \pm 5$

$2x = \frac{-1 \pm 5}{2}$

$x = \frac{-1+5}{2}$

$x = 2$

C:  $-100 = -100 \checkmark$

$x = \frac{-1-5}{2}$

$x = -3$

C:  $-100 = -100 \checkmark$

12)  $(3x+9)^2 + 5 = 5$

$(3x+9)^2 = 0$

$3x+9 = 0$

$3x = -9$

$x = -3$

C:  $5=5 \checkmark$

13)  $-2(x+3)^2 + 25 = -25$

$(x+3)^2 = 50$

$(x+3)^2 = 25$

$x+3 = \pm 5$

$x = -3 + 5$

$x = 2$

C:  $-25 = -25 \checkmark$

$x = -3 - 5$

$x = -8$

C:  $-25 = -25 \checkmark$