Name: _____ **Class:** _____ **Date:** _____ **ID: A**

04-02 Sample Quiz - Solving Radical Equations & Inequalities

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve the equation for *x*.

$\sqrt{3x+2} = 3\sqrt{2x-2}$

a. $x = \frac{4}{15}$
c. $x = \frac{8}{15}$
b. $x = \frac{4}{3}$
d. $x = \frac{8}{3}$

____ 2. Solve the equation for *x*.

$\sqrt{x-4} - 3 = -5$

a. $x = 0$
c. $x = 8$
b. $x = 2$
d. No Solution

____ 3. Completely solve the following equation for *x*.

$x + 3 = \sqrt{12x+1}$

a. x = – 4
c. x = – 2 or x = – 4
b. x = 2
d. x = 4 or x = 2

____ 4. Evan is attempting to solve the following radical equation:

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

Here is Evan's work:

Step #1: $\left(\sqrt{3x-1}\right)^2=\left(4\right)^2$

Step #2: $3x-1=8$ (+1 +1)

Step #3: $\frac{3x}{3}=\frac{9}{3}$

Step #4: $x=3$

Is his work correct or did he make an error.

a. Evan's work is correct.
b. Evan forgot to put a ± symbol on Step #2.
c. Evan didn't square 4 correctly on Step #2.
d. Evan should have subtracted 3 from both sides on Step #3.

____ 5. Solve the radical inequality.

$\sqrt{x-2}+5\le 9$

a. $2\le x\le 18$
b. $0\le x\le 6$
c. $x\ge 6$
d. No Solution

____ 6. Below are the steps Hope uses to solve a radical equation. Does Hope do the problem correctly or in which step did she make an error?

Equation: $x+3=\sqrt{2x+21}$

Step #1: $(x+3)^2=(\sqrt{2x+21}\ )^2$

Step #2: $x^2+6x+9=2x+21$

Step #3: $x^2+6x+9=2x+21$
$-2x\ \ -21\ \ -2x\ \ -21$
$x^2+4x-12=0$

Step #4: $(x+6)(x-2)=0$

Step #5: $x+6=0$ or $x-2=0$
$-6\ \ -6\ \ \ +2\ \ +2$
$x=-6$ or $x=2$

a. In **Step 1**, Hope should have taken the square root of both sides
b. In **Step 4**, Hope didn't factor correctly.
c. Hope didn't verify her answers in **Step #5**. One solution is extraneous.
d. Hope did the problem correctly. The answer is $x = -6$ or $x = 2$.

____ 7. Which graph below represents all of the possible values for x that make the following statement true?

$\sqrt{x-4}<3$

a. 

b. 

c. 

d.