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LT AA1 Review

LT AA1a: I can isolate a variable and manipulate equations with more than one variable.

1.) Solve for y:  $4x + 24 = -3(2 - 8y)$

$$\begin{array}{r} 4x + 24 = -6 + 24y \\ +6 \quad +6 \end{array}$$

$$\frac{4x + 30}{24} = \frac{24y}{24}$$

$$y = \frac{1x}{6} + \frac{5}{4}$$

2.) Solve for m:  $4m + 12n = 24$

$$\frac{4m}{4} = \frac{-12n + 24}{4}$$

$$m = -3n + 6$$

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3.) Solve for y:  $10x + 4y - 10 < 2(x - 4y)$

$$\begin{array}{r} 10x + 4y - 10 < 2x - 8y \\ -4y + 10 \quad -4y \end{array}$$

$$\frac{10x - 10}{2x} < \frac{2x - 12y}{-2x}$$

$$\frac{8x - 10}{-12} < \frac{-12y}{-12}$$

$$\frac{8x + 10}{12} > y$$

$$\frac{-2x}{8} + \frac{5}{6} > y$$

4.) Solve for y:  $m = 2 + \sqrt{y - 5}$

$$(m - 2)^2 = (\sqrt{y - 5})^2$$

$$\begin{array}{r} (m - 2)^2 = y - 5 \\ +5 \quad +5 \end{array}$$

$$y = (m - 2)^2 + 5$$

LT AA1b: I can simplify and algebraically solve simple, rational and radical equations

5.)  $16 = (10 - 5x)^{\frac{3}{4}}$

$x = \underline{6.06}$

$(16)^{\frac{4}{3}} = \left( \sqrt[4]{(10 - 5x)^3} \right)^4$

6.)  $(\sqrt{10 - 5x})^2 = (x - 2)^2$

$x = \underline{2, 3}$

$10 - 5x = (x - 2)(x - 2)$   
 $10 - 5x = x^2 - 4x + 4$   
 $0 = x^2 + x - 6$

$x = \frac{-1 \pm \sqrt{(1)^2 - 4(1)(-6)}}{2(1)}$

7.)  $\left( \frac{2x}{4} + \frac{x}{8} = 6 \right)$

$x = \underline{9.6}$

~~$\frac{2x}{4}$~~  +  $\frac{4x}{8} = 4.6$

$8 \cdot 2x + \frac{8 \cdot 4x}{8} = 8 \cdot 24$

$16x + 4x = 192$   
 $\frac{20x}{20} = \frac{192}{20}$

8.)  $(\sqrt{12 + 2x})^2 = (6)^2$

$x = \underline{12}$

$12 + 2x = 36$   
 $\frac{-12}{-12} \quad \frac{+2}{+2}$

$2x = 24$   
 $x = 12$

1, 1, 72, 12

$$2 \cdot (2x+4) = x \cdot 2x^2$$

9.) Solve for x:  $4|2x+5| - 2 = 2$

$$x = 2, -3$$

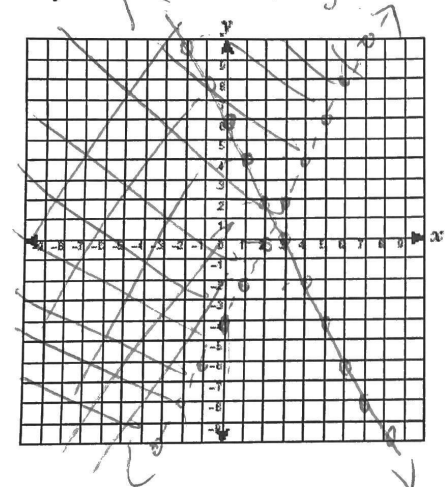
$$\frac{4}{4}|2x+5| = \frac{x+4}{4}$$

$$\begin{aligned} 2x+4 &= -2.5x-1 \\ -4 & \quad -4 \\ 2x &= -2.5x-3 \\ -2.5x & -2.5x \end{aligned}$$

$$\begin{aligned} 2x+4 &= -2.5x-1 \\ .5x-4 &= -2.5x-4 \\ 2.5x &= -5 \\ x &= -2.22 \end{aligned}$$

10.) Graph the following situations.

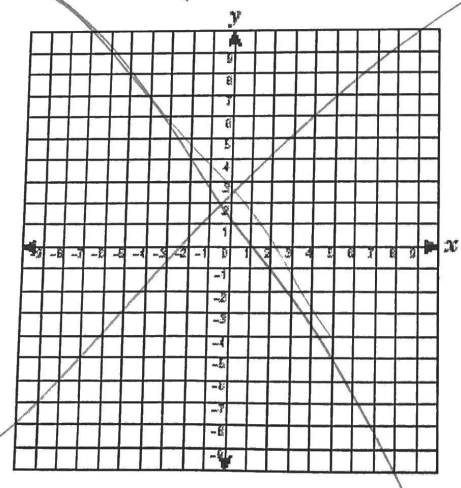
a.  $y > 2x - 4$     $4x + 2y \leq 12$



$$1.75x = -3$$
$$x = -1.71$$
$$4|2(-1.71)+5|-2 = -1.71+2$$

$$4|2(-2.22)+5|-2 = -2.22+2$$

b.  $4x + 2y \leq 12$



$$2y \leq -4x + 12$$

$$y \leq -2x + 6$$

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

11.) Simplify:  $\frac{y^9 y^6}{x^{-1} y^3}$   $\frac{y^{15}}{x^{-1} y^3} = y^{12} x$

12.) Simplify:  $(\frac{x^4}{y^6})^{-2}$   $\frac{x^{-8}}{y^{-12}} = \frac{y^{12}}{x^8}$

13.) Simplify:  $x^4 = 64$   $x = \underline{2.83}$   
 $\sqrt[4]{x^4} = \sqrt[4]{64}$

14.) Simplify:  $x^{\frac{3}{2}} = 4$   $x = \underline{\sqrt[3]{16}} = 2.52$   
 $(\sqrt{x^3})^2 = (4)^2$   
 $\sqrt[3]{x^3} = \sqrt[3]{16}$

- 15.) Describe the type of solutions and how many solutions you get when you.....
- Take an even root of a negative number
  - Take an odd root of a negative number