HW SOL Review 11.1 to 11.3

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Name:_____ Date:_____

Math 8 Review 11.1 to 11.3

1. Solve each of the following equations. Show all your work and steps:

i) $8a+6a=28$

$14a=28$

$\frac{14}{14}\quad\frac{14}{14}$

$a=2$

ii) $-20x+8x=14$

$-12x=14$

$\frac{-12}{-12}\quad\frac{14}{-12}$

$x=\frac{14}{-12}=\frac{7}{-6}=\frac{-7}{6}$

iii) $5x+13+7=3x-4$

$5x+20=3x-4$

$-3x\qquad -3x$

$2x+20=-4$

$-20\qquad -20$

$2x=-24$

$x=-12$

iv) $7n-9=8+20$

$7n-9=28$

$\frac{7n}{7}=\frac{19}{7}$

$n=\frac{19}{7}$

v) $6x-10+6x=23$

$12x-10=23$

$12x=33$

$x=\frac{33}{12}$

$x=\frac{11}{4}$

vi) $r+13+9r=29$

$10r+13=29$

$10r=16$

$r=\frac{16}{10}$

$r=\frac{8}{5}$

vii) $-20+8r=-14r+16$

$+14r\qquad +14r$

$22r-20=16$

$+20\qquad +20$

$22r=32$

$r=\frac{32}{22}$

$r=\frac{16}{11}$

viii) $-16x+15x+16=19$

$-x+16=19$

$\frac{-x}{-1}=\frac{3}{-1}$

$x=-3$

ix) $\frac{8x}{3}+12=4x-2$

$\frac{8x}{3}+\frac{36}{3}=\frac{12x}{3}-\frac{6}{3}$

$-8x\qquad -8x$

$36=4x-6$

$+6\qquad +6$

$\frac{42}{4}=\frac{4x}{4}$

$\frac{21}{2}=x$

$10.5=x.$

x) $\frac{9x}{4}-13=x+6$

$+13\qquad +13$

$\frac{9x}{4}=x+19$

$-x\qquad -x$

$\frac{9x}{4}-\frac{x}{1}=19$

$\frac{9x}{4}-\frac{4x}{4}=19$

$\frac{5x}{4}=19\left(\frac{4}{5}\right)$

$x=\frac{76}{5}$

xi) $-\frac{2x}{5}-16=3x+12$

xii) $\frac{-3x}{7}+18=-4x+\frac{2}{3}$

2. Solve each of the following and show all your work and steps

i) $\frac{n}{6}=\frac{6}{9}$

ii) $\frac{8}{9}=\frac{x}{5}$

iii) $\frac{x}{8}=\frac{9}{23}$

iv) $\frac{30}{x}=\frac{6}{14}$

v) $\frac{3}{4}x-0.5=\frac{2}{3}x$

vi) $\frac{8}{27}=\frac{2x}{189}$

3. Given the steps in solving the following equations, indicate where the mistake is:

$\frac{7x}{3}+2=-12$

$\frac{7x}{3}+2-2=-12-2$ *Step 1*

$\frac{7x}{3}=-10$ *Step 2*

$\left(\frac{3}{7}\right)\frac{7x}{3}=-10\left(\frac{3}{7}\right)$ *Step 3*

$x=\frac{-30}{-70}$ *Step 4*

$\frac{4x}{5}-2=-18+4x$

$\frac{4x}{5}-2+2=-18+2+4x$ *Step 1*

$\frac{4x}{5}=-16+4x$ *Step 2*

$\frac{4x}{5}-\frac{4x}{5}=-16+4x-\frac{4x}{5}$ *Step 3*

$0=-16+\frac{20x}{5}-\frac{4x}{5}$ *Step 4*

$-16=\frac{24x}{5}$ *Step 5*

$\frac{-80}{24}=x$ *Step 6*