

Name: _____

Date: _____

Math 8 Review 11.1 to 11.3

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

i) $8a + 6a = 28$

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

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

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

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

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

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

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

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

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

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

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

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:

$$\begin{aligned} \frac{7x}{3} + 2 &= -12 \\ \frac{7x}{3} + 2 - 2 &= -12 - 2 \quad \text{Step 1} \\ \frac{7x}{3} &= -10 \quad \text{Step 2} \\ \left(\frac{3}{7}\right)\frac{7x}{3} &= -10\left(\frac{3}{7}\right) \quad \text{Step 3} \\ x &= \frac{-30}{-70} \quad \text{Step 4} \end{aligned}$$

$$\begin{aligned} \frac{4x}{5} - 2 &= -18 + 4x \\ \frac{4x}{5} - 2 + 2 &= -18 + 2 + 4x \quad \text{Step 1} \\ \frac{4x}{5} &= -16 + 4x \quad \text{Step 2} \\ \frac{4x}{5} - \frac{4x}{5} &= -16 + 4x - \frac{4x}{5} \quad \text{Step 3} \end{aligned}$$

$$\begin{aligned} 0 &= -16 + \frac{20x}{5} - \frac{4x}{5} \quad \text{Step 4} \\ -16 &= \frac{24x}{5} \quad \text{Step 5} \\ \frac{-80}{24} &= x \quad \text{Step 6} \end{aligned}$$