$$\overset{P_M}{\frac{2(5)+4}{7}}$$ Here we follow order of operations!

$$\overset{P}{\frac{10+4}{7}} \to \overset{D}{\frac{14}{7}} \to \boxed{2}$$

~~ Unit 2, Page22 ~~

Objectives: I can solve one and two step equations with fractions, fractional coefficients and solutions.

MORE WITH FRACTIONS, FRACTIONAL COEFFICIENTS, AND SOLUTIONS

You may have to solve an equation with a big fraction bar that we encountered when we were simplifying expressions. Remember that when solving equations, you are UNDOING the order of operations to isolate the variable.

To Solve equations reverse order of operations

S A D M E P

For Example:

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

First, multiply each side by 5... you can think of the x+4 as being grouped together in parentheses.

group!

$$\cancel{5} \cdot \frac{(x+4)}{\cancel{5}} = -3 \cdot 5$$

The 5's on the left side cancel out, leaving a one-step equation.

Start with this

$$x + 4 = -15$$

Add (-4) to both side to isolate the variable.

$$\underline{\quad -4 \quad +4}$$

$$\boxed{x = -19}$$

check

$$\frac{(-19)+4}{5} \overset{?}{=} -3$$

$$\frac{-15}{5} = -3$$

$$-3 = -3 \checkmark$$

Remember, if you have a fractional coefficient, multiply by the reciprocal. You can expect some problems in the section to have rational (fractional) answers.

Un Do

$* \frac{2}{3}$	$* \frac{3}{2}$ 2nd step
$+16$	-16 1st step

$*-2$	$\div -2$ ✓ 2nd Step
$+5$	-5 ✓ 1st step

2nd step

Practice:

(5)A DM E P

1st step

1) $\frac{3}{1}\left(\frac{w-6}{3}\right) = 8(3)$

$$w - 6 = 24$$
$$\underline{+6 \quad +6}$$
$$\boxed{W = 30}$$

check

$$\frac{(30)-6}{3} = 8 \qquad \frac{24}{3} = 8$$
$$8 = 8$$

2) $\frac{2}{3}r + 16 = 8$
$$\underline{-16 \quad +16}$$
$$\frac{\cancel{3}}{\cancel{2}} \cdot \frac{\cancel{2}}{\cancel{3}}r = \frac{-8}{1} \cdot \frac{3}{2}$$
$$\boxed{r = -12}$$

check

$$\frac{2}{3}\left(\frac{-12}{1}\right) + 16 = 8$$
$$-8 + 16 = 8$$
$$8 = 8 \checkmark$$

3) $-2n + 5 = 20$
$$\underline{-5 \quad -5}$$
$$\frac{-2n}{-2} = \frac{15}{-2}$$
$$\boxed{n = -\frac{15}{2} = -7.5}$$

check $-2(-7.5) + 5 = 20$
$$15 + 5 = 20 \checkmark$$

4) $\frac{4}{1}\left(\frac{g+7}{4}\right) = -2(4)$
$$9 + 7 = -8$$
$$\underline{\quad -7 \quad +-7}$$
$$\boxed{g = -15}$$

check

$$\frac{(-15)+7}{4} = -2$$
$$\frac{-8}{4} = -2$$
$$-2 = -2 \checkmark$$

5) $-\frac{5}{8}u - 8 = 12$
$$\underline{+8 \quad +8}$$
$$\left(-\frac{8}{5}\right)\frac{5}{8}u = \frac{20}{1}\left(-\frac{8}{5}\right)$$
$$\boxed{u = -32}$$

check

$$-\frac{5}{8}\left(\frac{-32}{1}\right) + (-8) = 12$$
$$20 + (-8) = 12$$
$$12 = 12 \checkmark$$

6) $6p + 9 = -5$
$$\underline{-9 \quad +9}$$
$$\frac{6p}{6} = \frac{-14}{6} \div 2$$
$$\boxed{P = -\frac{7}{3}} = \boxed{\frac{-14}{6}}$$

easier to check

$$6\left(\frac{-14}{6}\right) + 9 = -5$$
$$-14 + 9 = -5$$
$$-5 = -5 \checkmark$$