Lesson 4-6 Notes
Solving Equations with Fractions

Review: Solve each equations.

$3x + 7 = 37$ $-7 \quad -7$ $0 \quad 30$ $\frac{3x}{3} = \frac{30}{3}$ $x = 10$	**Check:** $3x + 7 = 37$ $3(10) + 7 = 37$ $37 = 37$ ✓
$11j - 84 = 92$ $+84 \quad +84$ $0 \quad 176$ $\frac{11j}{11} = \frac{176}{11}$ $j = 16$ $11 \overline{)176}$ → 16, -11, 66, -66, 0	**Check:** $11j - 84 = 92$ $11(16) - 84 = 92$ $176 - 84 = 92$ $92 = 92$ ✓ $176 - 84 = 92$
$a \div 4 = 13$ $\times 4 \quad \times 4$ $0 \quad 52$ $a = 52$	**Check:** $a \div 4 = 13$ $52 \div 4 = 13$ $13 = 13$ ✓ $4 \overline{)52}$ → 13, -4, 12
$5p + 4 = 34$ $-4 \quad -4$ $0 \quad 30$ $\frac{5p}{5} = \frac{30}{5}$ $p = 6$	**Check:** $5p + 4 = 34$ $5(6) + 4 = 34$ $30 + 4 = 34$ ✓

Solving Equations with Fractions by Adding/Subtracting

Example: $n - \frac{1}{2} = 4\frac{3}{4}$

$n - \frac{1}{2} = \frac{19}{4} + \frac{1}{2}$

$+\frac{1}{2} \quad +\frac{2}{4}$

$n = \frac{19}{4} + \frac{2}{4} = \frac{21}{4}$

$4 \overline{)21}$ → 5 r 1, 20, 1

$n = 5\frac{1}{4}$

You Try!

$x - \frac{7}{8} = 1\frac{1}{2}$.

$+\frac{7}{8} \quad +\frac{7}{8}$

$x = 1\frac{1}{2} + \frac{7}{8}$

$x = \frac{3 \times 4}{2 \times 4} + \frac{7}{8}$

$x = \frac{12}{8} + \frac{7}{8} = \frac{19}{8} = 2\frac{3}{8}$

$h + \frac{2}{5} = \frac{9}{10}$.

$-\frac{2}{5} \quad -\frac{2}{5}$

$h = \frac{9}{10} - \frac{2 \times 2}{5 \times 2}$

$h = \frac{9}{10} - \frac{4}{10} = \frac{5}{10} = \frac{1}{2}$

Solving Equations with Fractions by Multiplying/Dividing

Example 1: $\frac{s}{4} = -44$

divide

$S \div 4 = -44$

$\times 4 \quad \times 4$

$S = -176$

Example 2: $\frac{1}{3}x = 5$

$\div \frac{1}{3} \quad \div \frac{1}{3}$

$X = 5 \div \frac{1}{3}$

$X = \frac{5}{1} \times \frac{3}{1} = \frac{15}{1} = 15$

*flip and X

You Try!

$\frac{t}{8} = 3$ ×8

8×

$t = 24$

$\frac{3}{4}x = 16 \div \frac{3}{4}$

$\div \frac{3}{4} \quad \div \frac{3}{4}$

$X = 16 \div \frac{3}{4}$

$x = \frac{16}{1} \times \frac{4}{3} = \frac{64}{3} = 21\frac{1}{3}$

$3\overline{)64}$ 21 r 1

-6

04

-3

1

Solving Equations with Fractions by Multiplying/Dividing

Example: $\frac{2}{3}n - 6 = 22$

$+6 \quad +6$

28

$\frac{2}{3}n = 28 \div \frac{2}{3}$

$\div \frac{2}{3} \quad \div \frac{2}{3}$

$n = 28 \div \frac{2}{3}$

$n = \frac{28}{1} \times \frac{3}{2} = \frac{84}{2} = \frac{42}{1} = 42$

You Try!

$\frac{1}{4}x + 3 = 11$

$-3 \quad -3$

$\frac{1}{4}x = 8 \div \frac{1}{4}$

$\div \frac{1}{4}$

$x = 8 \div \frac{1}{4}$

$x = \frac{8}{1} \times \frac{4}{1} = 32$

$\frac{g}{6} - 7 = 3$

$+7 \quad +7$

10

$6 \times \frac{9}{6} = 10 \times 6$

$9 = 60$

$4\frac{3}{4} = v - 1\frac{1}{2}$

$\frac{19}{4} = v - \frac{3}{2}$

$\frac{19}{4} = v - \frac{6}{4}$

$+\frac{6}{4} \quad +\frac{6}{4}$

$\frac{25}{4} = v$

$6\frac{1}{4} = v$

$2\frac{1}{2}s \cdot 3 = 30$

$\div 3 \quad \div 3$

10

$\frac{2\frac{1}{2}s}{2\frac{1}{2}} = \frac{10}{2\frac{1}{2}}$

$s = 10 \div \frac{5}{2}$

$s = \frac{10}{1} \times \frac{2}{5} = \frac{20}{5} = 4$

Challenge:

$\frac{x}{10} + 1.5 = 3.8$

$0.25n - 2 = \frac{3}{4}$