Name _____

Solving Equations with Fractions

R 5-9

Here is how to solve addition, subtraction, multiplication, and division equations with fractions.

Addition

Solve $n + \frac{3}{5} = 9$.

$$n + \frac{3}{5} = 9$$

$$n + \frac{3}{5} - \frac{3}{5} = 9 - \frac{3}{5}$$

$$n = 8\frac{2}{5}$$

Subtraction

Solve $x - 2\frac{1}{3} = 6\frac{1}{9}$.

$$x - 2\frac{1}{3} = 6\frac{1}{9}$$

$$x - 2\frac{1}{3} + 2\frac{1}{3} = 6\frac{1}{9} + 2\frac{1}{3}$$

$$x = 6\frac{1}{9} + 2\frac{3}{9}$$

$$x = 8\frac{4}{9}$$

Multiplication

Solve $\frac{5}{8}y = 1\frac{2}{3}$.

$$\frac{5}{8}y = 1\frac{2}{3}$$

$$\left(\frac{8}{5}\right)\frac{5}{8}y = \frac{5}{3}\left(\frac{8}{5}\right)$$

$$y = \frac{\overset{1}{\cancel{5}}}{3} \times \frac{8}{\underset{1}{\cancel{5}}}$$

$$y = \frac{8}{3} = 2\frac{2}{3}$$

Division

Solve $a \div \frac{1}{4} = 3\frac{1}{2}$.

$$a \div \frac{1}{4} = 3\frac{1}{2}$$

$$a \times \frac{4}{1} = 3\frac{1}{2}$$

$$a \times \frac{4}{1}\left(\frac{1}{4}\right) = \frac{7}{2}\left(\frac{1}{4}\right)$$

$$a = \frac{7}{8}$$

Solve each equation and check your answer.

1. $z + 2\frac{1}{3} = 3\frac{1}{6}$ _____

2. $6n = \frac{3}{4}$ _____

3. $x - 1 = 4\frac{2}{3}$ _____

4. $y \div \frac{1}{2} = 2\frac{1}{8}$ _____

5. $\frac{3}{8} + n = 10$ _____

6. $2\frac{2}{9} \div 5 = x$ _____

7. Algebra The rainfall total for June is $4\frac{9}{10}$ in. Yesterday it rained $2\frac{1}{10}$ in. Use the equation $n + 2\frac{1}{10} = 4\frac{9}{10}$ to calculate how much rainfall was received before yesterday.

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Solve each equation and check your answer.

1. $y + 1\frac{1}{4} = 2\frac{3}{8}$ _____

2. $w - 2 = 3\frac{1}{2}$ _____

3. $z \div \frac{3}{4} = 4\frac{1}{4}$ _____

4. $\frac{1}{3} = \frac{7}{8}q$ _____

5. $6\frac{1}{2} = \frac{5}{6}b$ _____

6. $2\frac{1}{4} = p - \frac{3}{8}$ _____

7. $2\frac{1}{4} = x \div \frac{1}{2}$ _____

8. **Number Sense** Is the solution of $m \div \frac{2}{3} = 9$ greater than or less than the solution of $m \div \frac{1}{4} = 9$? Explain.

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9. The bakery used $42\frac{1}{3}$ c of flour. There were $10\frac{1}{3}$ c left in the flour bin. Use the equation $x - 42\frac{1}{3} = 10\frac{1}{3}$ to find out how many cups of flour the bakery had to start with. _____

10. Alex had a ball of string. He cut the string into 26 equal pieces. Each piece measured $3\frac{1}{4}$ in. Use the equation $m \div 26 = 3\frac{1}{4}$ to find the length of the ball of string. _____

Test Prep

11. Solve $12y = 2\frac{1}{4}$.

A. $1\frac{1}{2}$ B. $1\frac{1}{8}$ C. $\frac{7}{36}$ D. $\frac{9}{48}$

12. **Writing in Math** Write the steps you would use to solve the equation $z + 3\frac{1}{5} = 6\frac{3}{5}$. Solve.

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