

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**MESSY EQUATIONS**  
**N-GEN MATH® 6**

We've now learned how to solve all basic, one step equations. As a review, let's take a look at the first problem.

**Exercise #1:** Solve each of the following one step equations. Show your work.

(a)  $x + 8 = 19$

(b)  $n - 7 = 2$

(c)  $5c = 15$

(d)  $\frac{y}{3} = 8$

In each of these problems, all the constants were whole numbers and all the answers were also whole numbers. But, these equations can also involve decimals and fractions.

**Exercise #2:** Solve each of the following equations. Show your work.

(a)  $x + \frac{2}{3} = \frac{7}{2}$

(b)  $n - \frac{4}{5} = \frac{1}{2}$

(c)  $c + 2\frac{1}{3} = 5\frac{5}{6}$

Messy equations involving fractions can also occur when multiplication and division are involved.

**Exercise #3:** Solve each of the following equations. Show your work.

(a)  $\frac{1}{3}x = 10$

(b)  $\frac{4}{5}n = 16$

(c)  $\frac{2}{3}y = \frac{8}{15}$



**Exercise #4:** Solve each of the following equations. Show your work.

(a)  $\frac{n}{6} = \frac{7}{3}$

(b)  $\frac{c}{10} = \frac{2}{15}$

(c)  $\frac{x}{18} = \frac{7}{12}$

Decimals can make equations even messier than fractions (although that is up for debate). All our techniques for solving equations remain the same, even if the calculations get more difficult.

**Exercise #5:** Solve each of the following equations. Show your work.

(a)  $x - 4.6 = 1.8$

(b)  $n + 3.14 = 7.21$

**Exercise #6:** Solve each of the following equations. Show your work.

(a)  $7.4n = 50.32$

(b)  $\frac{t}{24} = 0.57$

**Exercise #7:** Simon signed up for a new e-book service. The service charges a set price per download. Simon downloaded 12 books and paid \$40.20. Let  $p$  be the price of single download. Set up an equation involving  $p$  and solve it for the price of a single download. Show your work.



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**MESSY EQUATIONS**  
**N-GEN MATH<sup>®</sup> 6 HOMEWORK**

**FLUENCY**

1. Solve each of the following equations. Show the work you used to find your answer. Place your answers in simplest form. Convert any improper fractions into mixed numbers.

(a)  $n + \frac{2}{5} = \frac{3}{2}$

(b)  $y - \frac{4}{3} = \frac{11}{6}$

(c)  $x + 3\frac{1}{2} = 7\frac{1}{3}$

2. Solve each of the following equations. Show the work you used to find your answer. Place your answers in simplest form. Convert any improper fractions into mixed numbers.

(a)  $\frac{3}{8}x = 21$

(b)  $\frac{4}{7}n = \frac{2}{3}$

(c)  $\frac{5}{2}y = \frac{20}{9}$

3. Solve each of the following equations. Show the work you used to find your answer. Place your answers in simplest form. Convert any improper fractions into mixed numbers.

(a)  $\frac{n}{8} = \frac{11}{4}$

(b)  $\frac{c}{10} = \frac{3}{4}$

(c)  $\frac{x}{12} = \frac{7}{10}$



4. Solve each of the following equations. Show the work that leads to your answer.

(a)  $x + 8.52 = 11.39$

(b)  $n - 1.875 = 9.366$

5. Solve each of the following equations. Show the work that leads to your answer.

(a)  $6.4n = 77.44$

(b)  $\frac{x}{28} = 0.72$

## USING YOUR MATH

6. Vivian divides the total amount of money she has evenly between her three children. Each child receives \$8.84. Let  $m$  be the total money that Vivian has. Write an equation involving  $m$  and solve it for the total amount of money that Vivian has (or had).

7. Tonia scored 24 points in a video game. Tonia's score was three-fifths of the number of points that Ada scored. Let  $n$  be the number of points that Ada scored. Write an equation involving  $n$  and then solve it to determine Ada's score.

