

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Multi-Step Decimal Equations

Solve exactly, then round the final value to the nearest hundredth.

1. $-2.5 - 6(1 - 9g) = 19.5$

6. $7(-23 + 2d) = -11.5$

2. $3.5m - 20.5 + 18 = -1.5$

7. $21.5 = 5(2s + 16)$

3. $-7.5n - 8.5n = 5.5$

8. $-8.5(-2.5n + 8.5) = -27.5 - 5.5n$

4. $-20.5 + 5f = -6(-2.5f + 5.5)$

9. $28.5 = -21.5 - 7.5(x - 29.5)$

5. $3.5p - 26 - 8p = -2.5$

10. $-30.5 = -3q + 6.5q$

Multi-Step Decimal Equations

Answer Key

Solve exactly, then round the final value to the nearest hundredth.

1. $-2.5 - 6(1 - 9g) = 19.5$

$$54g - 8.5 = 19.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$54g = 28$$

Move constants by doing the same operation to both sides.

$$g = \frac{14}{27}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (g): 0.52

$$-2.5 - 6\left(1 - 9 \times \frac{14}{27}\right) = 19.5$$

Substitute the exact value into the original equation.

2. $3.5m - 20.5 + 18 = -1.5$

$$3.5m - 2.5 = -1.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$3.5m = 1$$

Move constants by doing the same operation to both sides.

$$m = \frac{2}{7}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (m): 0.29

$$3.5 \times \frac{2}{7} - 20.5 + 18 = -1.5$$

Substitute the exact value into the original equation.

3. $-7.5n - 8.5n = 5.5$

$$-16n = 5.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$n = -0.34375$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (n): -0.34

$$-7.5 \times (-0.34375) - 8.5 \times (-0.34375) = 5.5$$

Substitute the exact value into the original equation.

4. $-20.5 + 5f = -6(-2.5f + 5.5)$

$$5f - 20.5 = 15f - 33$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$-10f - 20.5 = -33$$

Move variable terms by doing the same operation to both sides.

$$-10f = -12.5$$

Move constants by doing the same operation to both sides.

$$f = 1.25$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (f): 1.25

$$-20.5 + 5 \times 1.25 = -6(-2.5 \times 1.25 + 5.5)$$

Substitute the exact value into the original equation.

Multi-Step Decimal Equations

Answer Key

Solve exactly, then round the final value to the nearest hundredth.

5. $3.5p - 26 - 8p = -2.5$

$$-4.5p - 26 = -2.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$-4.5p = 23.5$$

Move constants by doing the same operation to both sides.

$$p = -\frac{47}{9}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (p): -5.22

$$3.5 \times \left(-\frac{47}{9}\right) - 26 - 8 \times \left(-\frac{47}{9}\right) = -2.5$$

Substitute the exact value into the original equation.

6. $7(-23 + 2d) = -11.5$

$$14d - 161 = -11.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$14d = 149.5$$

Move constants by doing the same operation to both sides.

$$d = \frac{299}{28}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (d): 10.68

$$7(-23 + 2 \times \frac{299}{28}) = -11.5$$

Substitute the exact value into the original equation.

7. $21.5 = 5(2s + 16)$

$$21.5 = 10s + 80$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$-10s + 21.5 = 80$$

Move variable terms by doing the same operation to both sides.

$$-10s = 58.5$$

Move constants by doing the same operation to both sides.

$$s = -5.85$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (s): -5.85

$$21.5 = 5(2 \times (-5.85) + 16)$$

Substitute the exact value into the original equation.

8. $-8.5(-2.5n + 8.5) = -27.5 - 5.5n$

$$21.25n - 72.25 = -5.5n - 27.5$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$26.75n - 72.25 = -27.5$$

Move variable terms by doing the same operation to both sides.

$$26.75n = 44.75$$

Move constants by doing the same operation to both sides.

$$n = \frac{179}{107}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (n): 1.67

$$-8.5 \left(-2.5 \times \frac{179}{107} + 8.5\right) = -27.5 - 5.5 \times \frac{179}{107}$$

Substitute the exact value into the original equation.

Multi-Step Decimal Equations

Answer Key

Solve exactly, then round the final value to the nearest hundredth.

9. $28.5 = -21.5 - 7.5(x - 29.5)$

$$28.5 = -7.5x + 199.75$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$7.5x + 28.5 = 199.75$$

Move variable terms by doing the same operation to both sides.

$$7.5x = 171.25$$

Move constants by doing the same operation to both sides.

$$x = \frac{137}{6}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (x): 22.83

$$28.5 = -21.5 - 7.5\left(\frac{137}{6} - 29.5\right)$$

Substitute the exact value into the original equation.

10. $-30.5 = -3q + 6.5q$

$$-30.5 = 3.5q$$

Rewrite each side in equivalent affine form, distributing and collecting when needed.

$$-3.5q - 30.5 = 0$$

Move variable terms by doing the same operation to both sides.

$$-3.5q = 30.5$$

Move constants by doing the same operation to both sides.

$$q = -\frac{61}{7}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (q): -8.71

$$-30.5 = -3 \times \left(-\frac{61}{7}\right) + 6.5 \times \left(-\frac{61}{7}\right)$$

Substitute the exact value into the original equation.