

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Multi-Step Integer Equations

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

1. $-4(2 + 3g) = 9 + 8g$

6. $-3 = 6d + 8 + 10$

2. $9 = 7(-5 + 6d)$

7. $5p + 9p = 3$

3. $2 + 4m = -2(9 + 9m)$

8. $5 + 3c = -10(5c + 2)$

4. $-6 = 8q + 7q$

9. $3d + 3 + 9 = -6$

5. $3(5 + -4g) = 10$

10. $2(2f + 8) = 6 + -7f$

Multi-Step Integer Equations

Answer Key

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

1. $-4(2 + 3g) = 9 + 8g$

$$-12 - 12g = 9 + 8g$$

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

$$-12 - 12g = 9 + 8g$$

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

$$-12 - 12g = 9 + 8g$$

Move constants by doing the same operation to both sides.

$$g = -\frac{17}{20}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (g): -0.85

$$-4(2 + 3 \times (-\frac{17}{20})) = 9 + 8 \times (-\frac{17}{20})$$

Substitute the exact value into the original equation.

2. $9 = 7(-5 + 6d)$

$$9 = 42d - 35$$

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

$$-42d + 9 = -35$$

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

$$-42d = -44$$

Move constants by doing the same operation to both sides.

$$d = \frac{22}{21}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (d): 1.05

$$9 = 7(-5 + 6 \times \frac{22}{21})$$

Substitute the exact value into the original equation.

3. $2 + 4m = -2(9 + 9m)$

$$4m + 2 = -18 - 18m$$

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

$$22m + 2 = -18$$

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

$$22m = -20$$

Move constants by doing the same operation to both sides.

$$m = -\frac{10}{11}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (m): -0.91

$$2 + 4 \times (-\frac{10}{11}) = -2(9 + 9 \times (-\frac{10}{11}))$$

Substitute the exact value into the original equation.

Multi-Step Integer Equations

Answer Key

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

4. $-6 = 8q + 7q$

$$-6 = 15q$$

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

$$-15q - 6 = 0$$

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

$$-15q = 6$$

Move constants by doing the same operation to both sides.

$$q = -\frac{2}{5}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (q): -0.40

$$-6 = 8 \times \left(-\frac{2}{5}\right) + 7 \times \left(-\frac{2}{5}\right)$$

Substitute the exact value into the original equation.

5. $3(5 + -4g) = 10$

$$-12g + 15 = 10$$

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

$$-12g = -5$$

Move constants by doing the same operation to both sides.

$$g = \frac{5}{12}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (g): 0.42

$$3\left(5 + -4 \times \frac{5}{12}\right) = 10$$

Substitute the exact value into the original equation.

6. $-3 = 6d + 8 + 10$

$$-3 = 6d + 18$$

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

$$-6d - 3 = 18$$

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

$$-6d = 21$$

Move constants by doing the same operation to both sides.

$$d = -\frac{7}{2}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (d): -3.50

$$-3 = 6 \times \left(-\frac{7}{2}\right) + 8 + 10$$

Substitute the exact value into the original equation.

7. $5p + 9p = 3$

$$14p = 3$$

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

$$p = \frac{3}{14}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (p): 0.21

$$5 \times \frac{3}{14} + 9 \times \frac{3}{14} = 3$$

Substitute the exact value into the original equation.

Multi-Step Integer Equations

Answer Key

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

8. $5 + 3c = -10$ ($5c + 2$)

$$3c + 5 = -50 \quad c = -20$$

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

$$53c + 5 = -20$$

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

$$53c = -25$$

Move constants by doing the same operation to both sides.

$$c = -\frac{25}{53}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (c): -0.47

$$5 + 3 \times \left(-\frac{25}{53}\right) = -10 \quad \left(5 \times \left(-\frac{25}{53}\right) + 2\right)$$

Substitute the exact value into the original equation.

9. $3d + 3 + 9 = -6$

$$3d + 12 = -6$$

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

$$3d = -18$$

Move constants by doing the same operation to both sides.

$$d = -6$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (d): -6.00

$$3 \times (-6) + 3 + 9 = -6$$

Substitute the exact value into the original equation.

10. $2(2f + 8) = 6 + -7$ f

$$4f + 16 = -7 \quad f + 6$$

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

$$11f + 16 = 6$$

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

$$11f = -10$$

Move constants by doing the same operation to both sides.

$$f = -\frac{10}{11}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (f): -0.91

$$2\left(2 \times \left(-\frac{10}{11}\right) + 8\right) = 6 + -7 \quad \times \left(-\frac{10}{11}\right)$$

Substitute the exact value into the original equation.