

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Variables on Both Sides

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

1. $5r - 3 = 2r - 6$

6. $5f + 7 = 3f + 5f - 5$

2. $3(q + 7) = 5(q - 3)$

7. $2(k + 3) = 5(k - 7)$

3. $3w + 9 = 4(2w - 6)$

8. $4w + 4 = 2 - 5(w - 5)$

4. $5y + 5 = 2y + 4$

9. $5 + 5(r + 2) = 2r + 2$

5. $4y + 5y + 2 = 3y + 6$

10. $5(2n + 8) = 4n - 2$

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Answer Key

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

1. $5r - 3 = 2r - 6$

$$3r - 3 = -6$$

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

$$3r = -3$$

Move constants by doing the same operation to both sides.

$$r = -1$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (r): -1.00

$$5 \times (-1) - 3 = 2 \times (-1) - 6$$

Substitute the exact value into the original equation.

2. $3(q + 7) = 5(q - 3)$

$$3q + 21 = 5q - 15$$

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

$$-2q + 21 = -15$$

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

$$-2q = -36$$

Move constants by doing the same operation to both sides.

$$q = 18$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (q): 18.00

$$3(18 + 7) = 5(18 - 3)$$

Substitute the exact value into the original equation.

3. $3w + 9 = 4(2w - 6)$

$$3w + 9 = 8w - 24$$

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

$$-5w + 9 = -24$$

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

$$-5w = -33$$

Move constants by doing the same operation to both sides.

$$w = \frac{33}{5}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (w): 6.60

$$3 \times \frac{33}{5} + 9 = 4(2 \times \frac{33}{5} - 6)$$

Substitute the exact value into the original equation.

4. $5y + 5 = 2y + 4$

$$3y + 5 = 4$$

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

$$3y = -1$$

Move constants by doing the same operation to both sides.

$$y = -\frac{1}{3}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (y): -0.33

$$5 \times (-\frac{1}{3}) + 5 = 2 \times (-\frac{1}{3}) + 4$$

Substitute the exact value into the original equation.

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5. $4y + 5y + 2 = 3y + 6$

$$9y + 2 = 3y + 6$$

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

$$6y + 2 = 6$$

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

$$6y = 4$$

Move constants by doing the same operation to both sides.

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

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (y): 0.67

$$4 \times \frac{2}{3} + 5 \times \frac{2}{3} + 2 = 3 \times \frac{2}{3} + 6$$

Substitute the exact value into the original equation.

6. $5f + 7 = 3f + 5f - 5$

$$5f + 7 = 8f - 5$$

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

$$-3f + 7 = -5$$

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

$$-3f = -12$$

Move constants by doing the same operation to both sides.

$$f = 4$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (f): 4.00

$$5 \times 4 + 7 = 3 \times 4 + 5 \times 4 - 5$$

Substitute the exact value into the original equation.

7. $2(k + 3) = 5(k - 7)$

$$2k + 6 = 5k - 35$$

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

$$-3k + 6 = -35$$

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

$$-3k = -41$$

Move constants by doing the same operation to both sides.

$$k = \frac{41}{3}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (k): 13.67

$$2\left(\frac{41}{3} + 3\right) = 5\left(\frac{41}{3} - 7\right)$$

Substitute the exact value into the original equation.

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8. $4w + 4 = 2 - 5(w - 5)$

$$4w + 4 = -5w + 27$$

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

$$9w + 4 = 27$$

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

$$9w = 23$$

Move constants by doing the same operation to both sides.

$$w = \frac{23}{9}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (w): 2.56

$$4 \times \frac{23}{9} + 4 = 2 - 5\left(\frac{23}{9} - 5\right)$$

Substitute the exact value into the original equation.

9. $5 + 5(r + 2) = 2r + 2$

$$5r + 15 = 2r + 2$$

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

$$3r + 15 = 2$$

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

$$3r = -13$$

Move constants by doing the same operation to both sides.

$$r = -\frac{13}{3}$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (r): -4.33

$$5 + 5\left(-\frac{13}{3} + 2\right) = 2 \times \left(-\frac{13}{3}\right) + 2$$

Substitute the exact value into the original equation.

10. $5(2n + 8) = 4n - 2$

$$10n + 40 = 4n - 2$$

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

$$6n + 40 = -2$$

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

$$6n = -42$$

Move constants by doing the same operation to both sides.

$$n = -7$$

Exact value. Divide both sides by the nonzero coefficient.

Rounded value (n): -7.00

$$5(2 \times (-7) + 8) = 4 \times (-7) - 2$$

Substitute the exact value into the original equation.