math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations - Set 1

AB-TSE 1

Instructions: Solve each equation.

1 $4x + 7 = 15$

$-7 \quad -7$

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

$x = 2$

2 $2x - 4 = 10$

3 $6 + 3x = 15$

4 $25 = 4 + 7x$

5 $41 = 8x - 23$

6 $5x - 12 = 18$

7 $9x + 7 = 88$

8 $25 = 3x - 8$

9 $1 + 10x = 91$

10 $16 = 12 + 4x$

math Antics Worksheets

Name: _____

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Solving 2-Step Equations - Set 2

AB-TSE 2

Instructions: Solve each equation.

1. $\frac{x}{4} + 5 = 12$

   $-5 \quad -5$

   $(4)\frac{x}{4} = 7(4)$

   $x = 28$

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

3. $\frac{x}{6} + 15 = 20$

4. $35 = 11 + 6x$

5. $5x + 20 = 75$

6. $8 + \frac{x}{9} = 14$

7. $11 = \frac{x}{2} - 7$

8. $4x - 11 = 5$

9. $21 = 21 + 7x$

10. $\frac{x}{12} - 9 = 1$

math Antics Worksheets

Name:

Date:

Solving 2-Step Equations (with Groups)

AB-TSE 3

Instructions: Solve each equation.

1 $\frac{3(x-5)}{3} = \frac{18}{3}$

$x - 5 = 6$

$+5 \quad +5$

$x = 11$

2 $5(x+6) = 40$

3 $\frac{x+9}{2} = 5$

4 $\frac{x-15}{4} = 3$

5 $32 = 8(x+1)$

6 $\frac{3+x}{7} = 4$

7 $\frac{x-10}{9} = 7$

8 $6(x-11) = 42$

9 $10(x+2) = 70$

10 $\frac{x+5}{4} = 14$

math Antics Worksheets

Name:

Date:

Solving "Tricky" 2-Step Equations

AB-TSE 4

Instructions: Some 2-Step Equations are tricky because of the location of the unknown in operations that don't commute (subtraction and division). One way to solve these equations is to do an extra initial step to re-arrange the equation so that it looks like one you already know how to solve.

1 $\cancel{(x+5)}\dfrac{12}{\cancel{x+5}} = 2(x+5)$

$\dfrac{12}{2} = \dfrac{\cancel{2}(x+5)}{\cancel{2}}$

$6 = x + 5$

$-5 \quad -5$

$1 = x$ or $x = 1$

2 $\dfrac{21}{x-4} = 7$

3 $11 = 23 - 4x$

4 $27 - 3x = 15$

5 $8 = \dfrac{24}{x-3}$

6 $7 = \dfrac{77}{x+6}$

7 $41 - 2x = 9$

8 $25 = 80 - 11x$

math Antics Worksheets

Name:

Date:

Solving 2-Step Equations (with decimals)

AB-TSE 5

Instructions: Solve each equation. You can use a calculator to do the decimal arithmetic if you'd like to.

1. $1.5 + 2x = 12.5$

2. $3.5(x + 0.2) = 7$

3. $\frac{x + 6.1}{2} = 3.4$

4. $\frac{x - 3}{2.8} = 1.2$

5. $4(x - 1.9) = 5.2$

6. $\frac{x}{1.1} + 3.6 = 4.3$

7. $\frac{x - 2.5}{9} = 4.5$

8. $3x + 1.8 = 7.2$

9. $\frac{x}{0.4} - 2.3 = 7.2$

10. $\frac{x + 1.7}{3.1} = 6$

math Antics Worksheets

Name:

Date:

Solving 2-Step Equations (with negative numbers)

AB-TSE 6

Instructions: Solve each equation.

1. $-5 + 2x = -17$

2. $-9(x - 9) = 27$

3. $\frac{x + (-3)}{-5} = -6$

4. $\frac{x + 15}{-3} = -2$

5. $3(x - 8) = -60$

6. $\frac{x}{-2} + 10 = -3$

7. $\frac{x + 8}{-6} = 2$

8. $-3x - 3 = -15$

9. $\frac{x}{-9} - 1 = 9$

10. $\frac{x - 12}{-7} = 4$

math Antics
Exercises

Name:

Date:

Solving 2-Step Equations

1 Solve for x

$$2x + 5 = 17$$

2 Solve for x

$$\frac{x}{3} - 6 = 4$$

3 Solve for x

$$20 = 8 + 4x$$

4 Solve for x

$$2(x + 9) = 24$$

5 Solve for x

$$15 = 3(x - 6)$$

6 Solve for x

$$\frac{x + 3}{5} = 4$$

7 Solve for x

$$5 = 9 - 2x$$

8 Solve for x

$$\frac{28}{x - 2} = 4$$

math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations - Set 1

AB-TSE 1

Instructions: Solve each equation.

1 $4x + 7 = 15$

$-7 \quad -7$

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

$x = 2$

2 $2x - 4 = 10$

$+4 \quad +4$

$\frac{2x}{2} = \frac{14}{2}$

$x = 7$

3 $6 + 3x = 15$

$-6 \quad -6$

$\frac{3x}{3} = \frac{9}{3}$

$x = 3$

4 $25 = 4 + 7x$

$-4 \quad -4$

$\frac{21}{7} = \frac{7x}{7}$

$3 = x$ or $x = 3$

5 $41 = 8x - 23$

$+23 \quad +23$

$\frac{64}{8} = \frac{8x}{8}$

$8 = x$ or $x = 8$

6 $5x - 12 = 18$

$+12 \quad +12$

$\frac{5x}{5} = \frac{30}{5}$

$x = 6$

7 $9x + 7 = 88$

$-7 \quad -7$

$\frac{9x}{9} = \frac{81}{9}$

$x = 9$

8 $25 = 3x - 8$

$+8 \quad +8$

$\frac{33}{3} = \frac{3x}{3}$

$11 = x$ or $x = 11$

9 $1 + 10x = 91$

$-1 \quad -1$

$\frac{10x}{10} = \frac{90}{10}$

$x = 9$

10 $16 = 12 + 4x$

$-12 \quad -12$

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

$1 = x$ or $x = 1$

math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations - Set 2

AB-TSE 2

Instructions: Solve each equation.

1 $\frac{x}{4} + 5 = 12$

$-5 \quad -5$

$(4)\frac{x}{4} = 7(4)$

$x = 28$

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

$+3 \quad +3$

$(2)\frac{x}{2} = 12(2)$

$x = 24$

3 $\frac{x}{6} + 15 = 20$

$-15 \quad -15$

$(6)\frac{x}{6} = 5(6)$

$x = 30$

4 $35 = 11 + 6x$

$-11 \quad -11$

$\frac{24}{6} = \frac{6x}{6}$

$4 = x$ or $x = 4$

5 $5x + 20 = 75$

$-20 \quad -20$

$\frac{5x}{5} = \frac{55}{5}$

$x = 11$

6 $8 + \frac{x}{9} = 14$

$-8 \quad -8$

$(9)\frac{x}{9} = 6(9)$

$x = 54$

7 $11 = \frac{x}{2} - 7$

$+7 \quad +7$

$(2)18 = \frac{x}{2}(2)$

$36 = x$ or $x = 36$

8 $4x - 11 = 5$

$+11 \quad +11$

$\frac{4x}{4} = \frac{16}{4}$

$x = 4$

9 $21 = 21 + 7x$

$-21 \quad -21$

$\frac{0}{7} = \frac{7x}{7}$

$0 = x$ or $x = 0$

10 $\frac{x}{12} - 9 = 1$

$+9 \quad +9$

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

$x = 120$

math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations (with Groups)

AB-TSE 3

Instructions: Solve each equation.

1 $\frac{3(x-5)}{3} = \frac{18}{3}$

$x - 5 = 6$

$+5 \quad +5$

$x = 11$

2 $\frac{5(x+6)}{5} = \frac{40}{5}$

$x + 6 = 8$

$-6 \quad -6$

$x = 2$

3 $(2)\frac{x+9}{2} = 5(2)$

$x + 9 = 10$

$-9 \quad -9$

$x = 1$

4 $(4)\frac{x-15}{4} = 3(4)$

$x - 15 = 12$

$+15 \quad +15$

$x = 27$

5 $\frac{32}{8} = \frac{8(x+1)}{8}$

$4 = x + 1$

$-1 \quad -1$

$3 = x$ or $x = 3$

6 $(7)\frac{3+x}{7} = 4(7)$

$3 + x = 28$

$-3 \quad -3$

$x = 25$

7 $(9)\frac{x-10}{9} = 7(9)$

$x - 10 = 63$

$+10 \quad +10$

$x = 73$

8 $\frac{6(x-11)}{6} = \frac{42}{6}$

$x - 11 = 7$

$+11 \quad +11$

$x = 18$

9 $\frac{10(x+2)}{10} = \frac{70}{10}$

$x + 2 = 7$

$-2 \quad -2$

$x = 5$

10 $(4)\frac{x+5}{4} = 14(4)$

$x + 5 = 56$

$-5 \quad -5$

$x = 51$

math Antics Worksheets

Name: _____

Date: _____

Solving "Tricky" 2-Step Equations

AB-TSE 4

Instructions: Some 2-Step Equations are tricky because of the location of the unknown in operations that don't commute (subtraction and division). One way to solve these equations is to do an extra initial step to re-arrange the equation so that it looks like one you already know how to solve.

1 $(x+5)\dfrac{12}{x+5} = 2(x+5)$

$\dfrac{12}{2} = \dfrac{2(x+5)}{2}$

$6 = x + 5$

$-5 \quad -5$

$1 = x$ or $x = 1$

2 $(x-4)\dfrac{21}{x-4} = 7(x-4)$

$\dfrac{21}{7} = \dfrac{7(x-4)}{7}$

$3 = x - 4$

$+4 \quad +4$

$7 = x$ or $x = 7$

3 $11 = 23 - 4x$

$+4x \quad +4x$

$4x + 11 = 23$

$-11 \quad -11$

$\dfrac{4x}{4} = \dfrac{12}{4}$

$x = 3$

4 $27 - 3x = 15$

$+3x \quad +3x$

$27 = 15 + 3x$

$-15 \quad -15$

$\dfrac{12}{3} = \dfrac{3x}{3}$

$4 = x$ or $x = 4$

5 $(x-3)8 = \dfrac{24}{x-3}(x-3)$

$\dfrac{8(x-3)}{8} = \dfrac{24}{8}$

$x - 3 = 3$

$+3 \quad +3$

$x = 6$

6 $(x+6)7 = \dfrac{77}{x+6}(x+6)$

$\dfrac{7(x+6)}{7} = \dfrac{77}{7}$

$x + 6 = 11$

$-6 \quad -6$

$x = 5$

7 $41 - 2x = 9$

$+2x \quad +2x$

$41 = 9 + 2x$

$-9 \quad -9$

$\dfrac{32}{2} = \dfrac{2x}{2}$ $x = 16$

8 $25 = 80 - 11x$

$+11x \quad +11x$

$11x + 25 = 80$

$-25 \quad -25$

$\dfrac{11x}{11} = \dfrac{55}{11}$ $x = 5$

math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations (with decimals)

AB-TSE 5

Instructions: Solve each equation. You can use a calculator to do the decimal arithmetic if you'd like to.

1 $1.5 + 2x = 12.5$

$-1.5 \quad -1.5$

$\frac{2x}{2} = \frac{11}{2}$

$x = 5.5$

2 $\frac{3.5(x + 0.2)}{3.5} = \frac{7}{3.5}$

$x + 0.2 = 2$

$-0.2 \quad -0.2$

$x = 1.8$

3 $(2)\frac{x + 6.1}{2} = 3.4(2)$

$x + 6.1 = 6.8$

$-6.1 \quad -6.1$

$x = 0.7$

4 $(2.8)\frac{x - 3}{2.8} = 1.2(2.8)$

$x - 3 = 3.36$

$+3 \quad +3$

$x = 6.36$

5 $\frac{4(x - 1.9)}{4} = \frac{5.2}{4}$

$x - 1.9 = 1.3$

$+1.9 \quad +1.9$

$x = 3.2$

6 $\frac{x}{1.1} + 3.6 = 4.3$

$-3.6 \quad -3.6$

$(1.1)\frac{x}{1.1} = 0.7(1.1)$

$x = 0.77$

7 $(9)\frac{x - 2.5}{9} = 4.5(9)$

$x - 2.5 = 40.5$

$+2.5 \quad +2.5$

$x = 43.0$

8 $3x + 1.8 = 7.2$

$-1.8 \quad -1.8$

$\frac{3x}{3} = \frac{5.4}{3}$

$x = 1.8$

9 $\frac{x}{0.4} - 2.3 = 7.2$

$+2.3 \quad +2.3$

$(0.4)\frac{x}{0.4} = 9.5(0.4)$

$x = 3.8$

10 $(3.1)\frac{x + 1.7}{3.1} = 6(3.1)$

$x + 1.7 = 18.6$

$-1.7 \quad -1.7$

$x = 16.9$

math Antics Worksheets

Name: _____

Date: _____

Solving 2-Step Equations (with negative numbers)

AB-TSE 6

Instructions: Solve each equation.

1 $-5 + 2x = -17$

$+5 \quad +5$

$\frac{2x}{2} = \frac{-12}{2}$

$x = -6$

2 $\frac{-9(x - 9)}{-9} = \frac{27}{-9}$

$x - 9 = -3$

$+9 \quad +9$

$x = 6$

3 $(-5)\frac{x + (-3)}{-5} = -6(-5)$

$x - 3 = 30$

$+3 \quad +3$

$x = 33$

4 $(-3)\frac{x + 15}{-3} = -2(-3)$

$x + 15 = 6$

$-15 \quad -15$

$x = -9$

5 $\frac{3(x - 8)}{3} = \frac{-60}{3}$

$x - 8 = -20$

$+8 \quad +8$

$x = -12$

6 $\frac{x}{-2} + 10 = -3$

$-10 \quad -10$

$(-2)\frac{x}{-2} = -13(-2)$

$x = 26$

7 $(-6)\frac{x + 8}{-6} = 2(-6)$

$x + 8 = -12$

$-8 \quad -8$

$x = -20$

8 $-3x - 3 = -15$

$+3 \quad +3$

$\frac{-3x}{-3} = \frac{-12}{-3}$

$x = 4$

9 $\frac{x}{-9} - 1 = 9$

$+1 \quad +1$

$(-9)\frac{x}{-9} = 10(-9)$

$x = -90$

10 $(-7)\frac{x - 12}{-7} = 4(-7)$

$x - 12 = -28$

$+12 \quad +12$

$x = -16$

math Antics
Exercises

Name:

Date:

Solving 2-Step Equations

1 Solve for x

$$2x + 5 = 17$$
$$-5 \quad -5$$
$$\frac{2x}{2} = \frac{12}{2}$$

$x = 6$

2 Solve for x

$$\frac{x}{3} - 6 = 4$$
$$+6 \quad +6$$
$$(3)\frac{x}{3} = 10(3)$$

$x = 30$

3 Solve for x

$$20 = 8 + 4x$$
$$-8 \quad -8$$
$$\frac{12}{4} = \frac{4x}{4}$$

$3 = x$ or $x = 3$

4 Solve for x

$$\frac{2(x + 9)}{2} = \frac{24}{2}$$
$$x + 9 = 12$$
$$-9 \quad -9$$

$x = 3$

5 Solve for x

$$\frac{15}{3} = \frac{3(x - 6)}{3}$$
$$5 = x - 6$$
$$+6 \quad +6$$

$11 = x$ or $x = 11$

6 Solve for x

$$(5)\frac{x + 3}{5} = 4(5)$$
$$x + 3 = 20$$
$$-3 \quad -3$$

$x = 17$

7 Solve for x

$$5 = 9 - 2x$$
$$+2x \quad +2x$$
$$2x + 5 = 9$$
$$-5 \quad -5$$
$$\frac{2x}{2} = \frac{4}{2}$$

$x = 2$

8 Solve for x

$$(x - 2)\frac{28}{x - 2} = 4(x - 2)$$
$$\frac{28}{4} = \frac{4(x - 2)}{4}$$
$$7 = x - 2$$
$$+2 \quad +2$$

$x = 9$

See Video for step-by-step solutions to each problem.