

## Problem Set 6: Multi-Step Equations

### Solving Multi-Step Equations

Solve each equation.

1)  $4n - 2n = 4$

2)  $-12 = 2 + 5v + 2v$

3)  $3 = x + 3 - 5x$

4)  $x + 3 - 3 = -6$

5)  $-12 = 3 - 2k - 3k$

6)  $-1 = -3r + 2r$

7)  $6 = -3(x + 2)$

8)  $-3(4r - 8) = -36$

9)  $24 = 6(-x - 3)$

10)  $75 = 3(-6n - 5)$

## Problem Set 6: Multi-Step Equations

### Answers

Solve each equation.

1)  $4n - 2n = 4$

$\{2\}$

2)  $-12 = 2 + 5v + 2v$

$\{-2\}$

3)  $3 = x + 3 - 5x$

$\{0\}$

4)  $x + 3 - 3 = -6$

$\{-6\}$

5)  $-12 = 3 - 2k - 3k$

$\{3\}$

6)  $-1 = -3r + 2r$

$\{1\}$

7)  $6 = -3(x + 2)$

$\{-4\}$

8)  $-3(4r - 8) = -36$

$\{5\}$

9)  $24 = 6(-x - 3)$

$\{-7\}$

10)  $75 = 3(-6n - 5)$

$\{-5\}$

## Problem Set 6: Multi-Step Equations

### Solving Multi-Step Equations

Solve each equation.

11)  $-3(1 + 6r) = 14 - r$

12)  $6(6v + 6) - 5 = 1 + 6v$

13)  $-4k + 2(5k - 6) = -3k - 39$

14)  $-16 + 5n = -7(-6 + 8n) + 3$

15)  $10p + 9 - 11 - p = -2(2p + 4) - 3(2p - 2)$

16)  $-10n + 3(8 + 8n) = -6(n - 4)$

17)  $10(x + 3) - (-9x - 4) = x - 5 + 3$

18)  $12(2k + 11) = 12(2k + 12)$

19)  $-12(x - 12) = -9(1 + 7x)$

20)  $-11 + 10(p + 10) = 4 - 5(2p + 11)$

## Problem Set 6: Multi-Step Equations

### Answers

$$11) -3(1 + 6r) = 14 - r$$

$\{-1\}$

$$12) 6(6v + 6) - 5 = 1 + 6v$$

$\{-1\}$

$$13) -4k + 2(5k - 6) = -3k - 39$$

$\{-3\}$

$$14) -16 + 5n = -7(-6 + 8n) + 3$$

$\{1\}$

$$15) 10p + 9 - 11 - p = -2(2p + 4) - 3(2p - 2)$$

$\{0\}$

$$16) -10n + 3(8 + 8n) = -6(n - 4)$$

$\{0\}$

$$17) 10(x + 3) - (-9x - 4) = x - 5 + 3$$

$\{-2\}$

$$18) 12(2k + 11) = 12(2k + 12)$$

No solution.

$$19) -12(x - 12) = -9(1 + 7x)$$

$\{-3\}$

$$20) -11 + 10(p + 10) = 4 - 5(2p + 11)$$

$\{-7\}$

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### Solving Multi-Step Equations

#### **Critical thinking question:**

21) Explain two ways you could solve  $20 = 5(-3 + x)$

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### Answers

#### **Critical thinking question:**

21) Explain two ways you could solve  $20 = 5(-3 + x)$

(1) Divide by 5 first, or (2) Distribute the 5 first.