Multistep Equations Subtraction Worksheet

1. Solve for
$$x$$
: $3x - 7 = 14$

2. Solve for y:
$$2y - 5 = 3y + 6$$

3. Solve for
$$m$$
: $5m - 9 = 2m + 12$

4. Solve for
$$n$$
: $4n - 3 = 2n + 9$

5. Solve for
$$x$$
: $7x - 8 = 5x + 10$

6. Solve for
$$p$$
: $6p - 11 = 3p + 4$

7. Solve for *a*:
$$8a - 15 = 2a + 3$$

8. Solve for z:
$$9z - 20 = 3z + 10$$

9. Solve for *b*:
$$10b - 7 = 2b + 25$$

10. Solve for y:
$$12y - 18 = 4y + 14$$

11. Solve for
$$x$$
: $4(2x-5)-3x=3(x+7)-2x$

12. Solve for
$$k$$
: $5k - 2(3k - 4) = 4k + 6$

13. Solve for
$$m$$
: $2(m-3)-5=3(m+2)-m$

14. Solve for z:
$$7(z-2) - 2(z+5) = 3z + 4$$

Answer Key

1.
$$3x - 7 = 14$$

Add 7 to both sides: 3x = 21

Divide by 3: x = 7

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

Subtract 2y from both sides: -5 = y + 6

Subtract 6 from both sides: -11 = y

So,
$$y = -11$$

3.
$$5m - 9 = 2m + 12$$

Subtract 2m from both sides: 3m - 9 = 12

Add 9 to both sides: 3m = 21

Divide by 3: m = 7

4.
$$4n-3=2n+9$$

Subtract 2n from both sides: 2n - 3 = 9

Add 3 to both sides: 2n = 12

Divide by 2: n = 6

5.
$$7x - 8 = 5x + 10$$

Subtract 5x from both sides: 2x - 8 = 10

Add 8 to both sides: 2x = 18

Divide by 2: x = 9

6.
$$6p - 11 = 3p + 4$$

Subtract 3p from both sides:
$$3p - 11 = 4$$

Add 11 to both sides:
$$3p = 15$$

Divide by 3:
$$p = 5$$

7.
$$8a - 15 = 2a + 3$$

Subtract 2a from both sides:
$$6a - 15 = 3$$

Add 15 to both sides:
$$6a = 18$$

Divide by 6:
$$a = 3$$

8.
$$9z - 20 = 3z + 10$$

Subtract 3z from both sides:
$$6z - 20 = 10$$

Add 20 to both sides:
$$6z = 30$$

Divide by
$$6: z = 5$$

9.
$$10b - 7 = 2b + 25$$

Subtract 2b from both sides:
$$8b - 7 = 25$$

Add 7 to both sides:
$$8b = 32$$

Divide by 8:
$$b = 4$$

10.
$$12y - 18 = 4y + 14$$

Subtract 4y from both sides:
$$8y - 18 = 14$$

Add 18 to both sides:
$$8y = 32$$

Divide by 8:
$$y = 4$$

11.
$$4(2x-5) - 3x = 3(x+7) - 2x$$

Expand:
$$8x - 20 - 3x = 3x + 21 - 2x$$

Simplify:
$$5x - 20 = x + 21$$

Subtract x from both sides:
$$4x - 20 = 21$$

Add 20 to both sides:
$$4x = 41$$

Divide by 4:
$$x = \frac{41}{4}$$

12.
$$5k - 2(3k - 4) = 4k + 6$$

Expand:
$$5k - 6k + 8 = 4k + 6$$

Simplify:
$$-k + 8 = 4k + 6$$

Add k to both sides:
$$8 = 5k + 6$$

Subtract 6 from both sides:
$$2 = 5k$$

Divide by 5:
$$k = \frac{2}{5}$$

13.
$$2(m-3)-5=3(m+2)-m$$

Expand:
$$2m - 6 - 5 = 3m + 6 - m$$

Simplify:
$$2m - 11 = 2m + 6$$

Subtract 2m from both sides:
$$-11 = 6$$

This equation has no solution (contradiction).

14.
$$7(z-2) - 2(z+5) = 3z + 4$$

Expand:
$$7z - 14 - 2z - 10 = 3z + 4$$

Simplify:
$$5z - 24 = 3z + 4$$

Subtract 3z from both sides:
$$2z - 24 = 4$$

Add 24 to both sides:
$$2z = 28$$

Divide by 2:
$$z = 14$$